

Exhibit 1

PLAINTIFFS' RESPONSE TO DEFENDANTS' MOTION TO EXCLUDE GENERAL CAUSATION TESTIMONY OF PLAINTIFFS' EXPERTS

Case No.: 4:22-md-03047-YGR

MDL No. 3047

In Re: Social Media Adolescent Addiction/Personal Injury Products Liability Litigation

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SUPERIOR COURT OF THE STATE OF CALIFORNIA
FOR THE COUNTY OF LOS ANGELES

COORDINATION PROCEEDINGS SPECIAL JUDICIAL COUNCIL
TITLE [RULE 3.400] COORDINATION
PROCEEDINGS NO.

5255
SOCIAL MEDIA CASES

-----/
THIS DOCUMENT RELATES TO: For Filing
Purposes:
Cristina Arlington Smith, et al., 22STCV21355
v. TikTok, Inc., et al.,
Los Angeles Superior Court
-----/

VIDEO-RECORDED DEPOSITION OF ANNA LEMBKE, MD
Wednesday, June 18, 2025
Morgan, Lewis & Bockius, LLP
1 Market Street, Spear Street Tower
San Francisco, CA 94147

Stenographically reported by:
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<p style="text-align: right;">Page 3</p> <p>1 APPEARANCES</p> <p>2</p> <p>3 Attorneys for Defendants Meta Platforms, Inc. f/k/a</p> <p>4 Facebook, Inc.; Instagram, LLC; Facebook Payments,</p> <p>5 Inc.; Facebook Operations, LLC; and Sculus, Inc.:</p> <p>6 COVINGTON & BURLING LLP</p> <p>7 BY: LINDSEY BARNHART, ESQ.</p> <p>8 3000 El Camino Real, Building 5</p> <p>9 Suite 1000</p> <p>10 Palo Alto, CA 94306</p> <p>11 (650) 632-4700</p> <p>12 lbarnhart@cov.com</p> <p>13</p> <p>14 Attorneys for Defendants YouTube, LLC and</p> <p>15 Google LLC:</p> <p>16 MORGAN, LEWIS & BOCKIUS LLP</p> <p>17 BY: BRIAN ERCOLE, ESQ.</p> <p>18 600 Brickell Avenue, Suite 1600</p> <p>19 Miami, FL 33131-3075</p> <p>20 (305) 415-3416</p> <p>21 brian.ercole@morganlewis.com</p> <p>22 BY: KATHERINE A. VAKY, ESQ.</p> <p>23 One Oxford Centre, 32nd Floor</p> <p>24 Pittsburg, PA 15219</p> <p>25 (412) 560-7474</p> <p>katherine.vaky@morganlewis.com</p> <p>Also present:</p> <p>James VonWiegen, Videographer</p> <p>Dan Lawlor, Trial Tech</p> <p>(Continued)</p>	<p style="text-align: right;">Page 5</p> <p>1 INDEX</p> <p>2 INDEX OF EXAMINATION</p> <p>3 EXAMINATION BY PAGE</p> <p>4 MR. ERCOLE 7</p> <p>5 MS. BARNHART 331</p> <p>6 MR. BLAVIN 358</p> <p>7 MS. LEHMAN 381</p> <p>8 MS. McNABB 411</p> <p>9 MR. ERCOLE 412</p> <p>10</p> <p>11 ---oOo---</p> <p>12 INDEX OF EXHIBITS MARKED FOR IDENTIFICATION</p> <p>13 EXHIBIT DESCRIPTION PAGE</p> <p>14 Lembke</p> <p>15 Exhibit 1 Defendants' Joint Notice of 20</p> <p>16 Deposition of Plaintiff's</p> <p>17 Retained Expert Anna Lembke and</p> <p>18 Request for Production of</p> <p>19 Documents</p> <p>20 Lembke</p> <p>21 Exhibit 2 Invoice, date 2/1/2023 32</p> <p>22 (LEMBKE000001 - LEMBKE000008)</p> <p>23 Lembke</p> <p>24 Exhibit 3 Expert Report, Anna Lembke, MD, 34</p> <p>25 dated 4/18/2025</p> <p>26 Lembke</p> <p>27 Exhibit 4 Curriculum Vitae of Anna Lembke, 55</p> <p>28 MD (LEMBKE000009 - LEMBKE000096)</p> <p>29 Lembke</p> <p>30 Exhibit 5 New York Times article 73</p> <p>31 Lembke</p> <p>32 Exhibit 6 American Psychiatric Association 167</p> <p>33 article entitled "From Planning</p> <p>34 to Publication: Developing</p> <p>35 DSM-5-TR"</p> <p>36 Lembke</p> <p>37 Exhibit 7 Declaration of Anna Lembke, MD 171</p> <p>38 (Continued)</p>

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<p style="text-align: right;">Page 6</p> <p>1 INDEX</p> <p>2 INDEX OF EXHIBITS MARKED FOR IDENTIFICATION</p> <p>3 EXHIBIT DESCRIPTION PAGE</p> <p>4 Lembke</p> <p>5 Exhibit 8 American Psychological 263</p> <p>6 Association article entitled</p> <p>7 "Limiting Social Media Use</p> <p>8 Decreases Depression, Anxiety,</p> <p>9 and Fear of Missing Out in Youth</p> <p>10 with Emotional Distress: A</p> <p>11 Randomized Controlled Trial"</p> <p>12 Exhibit 9 ResearchGate article entitled 266</p> <p>13 "Social media reduction or</p> <p>14 abstinence interventions are</p> <p>15 providing mental health benefits</p> <p>16 - reanalysis of a published</p> <p>17 meta-analysis"</p> <p>18 Exhibit 10 Article entitled "Understanding 332</p> <p>19 Perceptions of Problematic</p> <p>20 Facebook Use"</p> <p>21 (META3047MDL-020-00093973 -</p> <p>22 META3047MDL-020-00093985)</p> <p>23 Exhibit 11 Document entitled "Young 374</p> <p>24 consumers and social media,"</p> <p>25 dated February 2025</p> <p>Lembke</p> <p>Exhibit 12 Document entitled "TikTok 399</p> <p>History 101 - US"</p> <p>(TIKTOK3047MDL-056-00965196 -</p> <p>TIKTOK3047MDL-056-00965332)</p> <p>---oOo---</p> <p>QUESTIONS THE WITNESS WAS INSTRUCTED NOT TO ANSWER:</p> <p>Page Line</p> <p>40 24</p> <p>---oOo---</p>	<p style="text-align: right;">Page 8</p> <p>1 Do you remember that?</p> <p>2 A. Yes.</p> <p>3 Q. We'll get into some specifics a little bit</p> <p>4 later, but is it fair to say that you've been</p> <p>5 deposed as a expert witness before?</p> <p>6 A. Yes.</p> <p>7 Q. Okay. And how many depositions as an</p> <p>8 expert have you sat for in the past?</p> <p>9 A. I don't remember.</p> <p>10 Q. More than 50?</p> <p>11 A. No.</p> <p>12 Q. More than -- more than 25?</p> <p>13 A. No.</p> <p>14 Q. More than 20?</p> <p>15 A. No.</p> <p>16 Q. More than ten?</p> <p>17 A. I think I have it here in one of my</p> <p>18 appendices of my report.</p> <p>19 Well, I can't tell from here whether this</p> <p>20 prior testimony was in deposition or in court, but</p> <p>21 here there are 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11,</p> <p>22 12, 13 prior testimonies listed. Some of those are</p> <p>23 depositions; some of them are not.</p> <p>24 So it's probably less than ten.</p> <p>25 Q. Okay. And even though you've been through,</p>
<p style="text-align: right;">Page 7</p> <p>1 WEDNESDAY, JUNE 18, 2025</p> <p>2 SAN FRANCISCO, CALIFORNIA</p> <p>3 8:44 a.m. PDT</p> <p>4 THE VIDEOGRAPHER: We're now on the record.</p> <p>5 My name is James VonWiegen.</p> <p>6 The time is 8:44 a.m., June 18th, 2025.</p> <p>7 The deponent is Anna Lembke in the</p> <p>8 deposition of social media.</p> <p>9 The court reporter is Lorrie Marchant and</p> <p>10 will now swear in the witness.</p> <p>11 THE STENOGRAPHER: My name is</p> <p>12 Lorrie Marchant. I'm a California Certified</p> <p>13 Shorthand Reporter. My CSR license number is 10523.</p> <p>14 I will go ahead and swear in the witness</p> <p>15 now.</p> <p>16 ANNA LEMBKE,</p> <p>17 FIRST DULY SWORN/AFFIRMED, TESTIFIED AS FOLLOWS:</p> <p>18 EXAMINATION BY MR. ERCOLE</p> <p>19 BY MR. ERCOLE:</p> <p>20 Q. Good morning, Dr. Lembke. How are you</p> <p>21 doing?</p> <p>22 A. I'm doing well.</p> <p>23 Q. Good.</p> <p>24 My name is Brian Ercole. We met a little</p> <p>25 bit earlier.</p>	<p style="text-align: right;">Page 9</p> <p>1 you know, maybe -- maybe ten, maybe less than ten</p> <p>2 depositions, I just want to talk a -- about a couple</p> <p>3 of the ground rules for today if that's okay.</p> <p>4 A. Sure.</p> <p>5 Q. You understand that you have to tell the</p> <p>6 truth here today?</p> <p>7 A. I do.</p> <p>8 Q. And if I ask a question and you don't</p> <p>9 understand it, will you ask me to repeat it or</p> <p>10 rephrase it?</p> <p>11 A. I will.</p> <p>12 Q. And if you answer a question, I'm going to</p> <p>13 assume that you heard and understood it; is that</p> <p>14 fair?</p> <p>15 A. That's fair.</p> <p>16 Q. And this is sort of a routine question that</p> <p>17 I'm sure you've been asked before, but is there</p> <p>18 anything that would prevent you from giving</p> <p>19 truthful, accurate, and honest testimony here today?</p> <p>20 A. No.</p> <p>21 Q. If you do need a break during the course of</p> <p>22 today's deposition, just let us know and we can</p> <p>23 pause and take a break as long as there's not a</p> <p>24 question that's pending; is that fair?</p> <p>25 A. I will do that. I'd like to say that I'd</p>

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<p style="text-align: right;">Page 10</p> <p>1 like to minimize the breaks and take a short lunch, 2 if needed, because I'd like to get done as quickly 3 as possible. 4 Q. Sure. That's fair. And we'll do our best 5 to accommodate you. We may -- probably will need to 6 take some breaks just because there's a lot of 7 people involved and the court reporter is sort of 8 nodding her head right now. Other than you, she's 9 the second most important person here today. 10 Before we start, it looks like you have 11 some binders in front of you; is that right? 12 A. Yes. 13 Q. And how many binders do you have in front 14 of you? 15 A. Three. 16 Q. Okay. And what are they? 17 A. I have my report from April 18th, 2025. 18 That's the JCCP report. 19 I have my report from May 16th, 2025. 20 That's the federal report. 21 And I have a document of things like 22 materials considered. 23 Q. And so -- and the document with the 24 materials considered is in -- is in a third binder; 25 is that correct?</p>	<p style="text-align: right;">Page 12</p> <p>1 A. TikTok, Snapchat, Meta, YouTube. 2 Q. How do you define, Dr. Lembke, social 3 media? 4 A. Social media is an online interactive 5 platform that allows people to exchange messages, 6 videos, photos, or other forms of digital media in a 7 realtime interactive way and/or respond to what 8 other people have posted. 9 Q. Anything else in your definition? 10 A. That may not be a complete definition. I 11 would probably need a more specific example. You 12 could ask me, "Do you think this is social media?" 13 And I could say yea or nay. 14 Q. Do you consider the defendants in this case 15 to be social media platforms? 16 A. Yes, I do. 17 Q. Do those social media platforms have 18 different features? 19 A. What do you mean by "different features"? 20 Q. Well, you -- there are, I think you 21 mentioned, four or five different platforms that are 22 at issue in this case; correct? 23 A. Yes. 24 Q. And do those platforms have different 25 features?</p>
<p style="text-align: right;">Page 11</p> <p>1 A. Yes. 2 Q. Okay. And at a break, when we take a 3 break, are you comfortable if we copy those and mark 4 those as exhibits for this deposition? 5 A. Sure. 6 Q. But at least, just so I understand, what 7 are in those binders are your JCCP expert report 8 that you submitted; is that correct? 9 A. One binder is my JCCP report. One binder 10 is my federal report. And one binder is the list of 11 materials considered. 12 Q. Thank you. 13 We may use some jargon today, but I want to 14 make sure we're kind of on the same page about the 15 definitions of some of those terms and concepts. 16 Today I'm going to use sort of psychiatric 17 disorders and mental health disorders to mean the 18 same thing. 19 Is that okay with you? 20 A. I'm comfortable with that. 21 Q. Do you know who the defendants are in this 22 case? And by "this case," I mean the JCCP 23 litigation. 24 A. Yes, I do. 25 Q. Who are they?</p>	<p style="text-align: right;">Page 13</p> <p>1 A. Those platforms are more alike than 2 different. 3 Q. Well, that wasn't my question; right? 4 Do they have different features; yes or no? 5 MS. McNABB: Objection. 6 THE WITNESS: Those platforms are more 7 alike than different. They do have differences, but 8 they're more alike than different. 9 BY MR. ERCOLE: 10 Q. Are there social media platforms -- strike 11 that. 12 Are there other platforms that fall within 13 your definition of social media other than the 14 defendants who have been sued here today? 15 A. Yes. 16 Q. And can you -- what platforms are those? 17 Can you list them for me or name them for me? 18 A. Reddit, X, various e-mail platforms. 19 There's a long list. 20 Q. When you say "various e-mail platforms," 21 what do you mean by that? 22 A. People exchanging e-mails is a form of 23 social media. 24 What's distinct about the defendants' 25 platforms is that they are addictive by design.</p>

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<p style="text-align: right;">Page 14</p> <p>1 They have certain distinctive features that make 2 them addictive. 3 Q. We'll get into those -- those issues a 4 little bit later. I'm just trying to understand 5 your concept of social media. 6 Are there -- what other -- you mentioned 7 there's a long list of platforms that would fall 8 within your definition of social media. 9 Any others come to mind right now? 10 MS. McNABB: Sorry. Objection. Misstates. 11 THE WITNESS: I feel like I answered the 12 question. I don't have memorized the exhaustive 13 list of different types of social media platforms 14 that are out there. 15 BY MR. ERCOLE: 16 Q. Any others besides the ones that you 17 identified that come to mind right now? 18 A. No. 19 Q. If I use the term "social media platforms" 20 today, I'm going to be referring to all of the 21 social media platforms, not just the defendants' 22 platforms that are at issue in this case. 23 Is that okay with you? 24 A. Not really. 25 MS. McNABB: Object.</p>	<p style="text-align: right;">Page 16</p> <p>1 the definition that you're using, but I might not be 2 able to answer your question -- 3 BY MR. ERCOLE: 4 Q. Okay. 5 A. -- if you phrase it in that way. 6 Q. Okay. You gave a definition of social 7 media; correct? 8 A. I attempted to give a definition of social 9 media, but I qualified it by saying that it wasn't 10 an exhaustive definition and that I really would 11 be -- need to be presented with the specific 12 platform and look at the features to be able to say 13 whether or not I thought it was a form of social 14 media. 15 I also think that there's a distinction 16 between addictive social media and social media 17 platforms that don't have the same design features 18 that make them addictive. 19 Q. Sure. 20 We're not even talking about any of this. 21 I'm just trying to get a baseline understanding of 22 the concepts we're going to use today; okay? 23 I'm just going to let you know, when I'm 24 asking you a question about social media platforms, 25 I'm going to be referring to any platforms that</p>
<p style="text-align: right;">Page 15</p> <p>1 BY MR. ERCOLE: 2 Q. That's not okay with you? 3 A. No, that's not okay with me. 4 Q. Okay. 5 MS. McNABB: And just for the record, I 6 would object to doing so. It may depend on the 7 question. 8 MR. ERCOLE: Okay. Well, you can object 9 all you want. 10 BY MR. ERCOLE: 11 Q. If I ask you about defendants' -- I will be 12 specific about the defendants' platforms if I'm 13 asking you questions about defendants' platforms. 14 Do you understand that? 15 A. I do. 16 Q. Okay. And if I'm asking you questions 17 about social media platforms, I will be referring to 18 social media in general as you defined it. 19 Do you understand that? 20 A. To me that's problematic. 21 Q. Okay. Can be problematic, but that's going 22 to be the definition I'm using in my question. 23 Do you understand that? 24 MS. McNABB: Objection. 25 THE WITNESS: I understand that that may be</p>	<p style="text-align: right;">Page 17</p> <p>1 would fall within the definition of social media 2 that you gave; okay? 3 MS. McNABB: Objection. 4 BY MR. ERCOLE: 5 Q. Do you understand that? 6 A. I understand that you're saying that. But 7 I'm also telling you that if you ask me a question 8 and just use the generic term "social media," I will 9 likely not be able to answer that question. 10 Q. Okay. Did you use the generic term "social 11 media" in your report? 12 A. I didn't use a generic term of social 13 media, no. I was talking about the defendants' 14 platforms. 15 Q. Okay. How does your definition of social 16 media compare to the definition of digital media? 17 Is there a difference between the two? 18 A. Yes. 19 Q. What's the difference? 20 A. Digital media is the broad umbrella 21 category, and social media is a subtype of digital 22 media. 23 Q. And when you say "subtype of digital 24 media" -- well, when you say "broad umbrella 25 category," what do you mean by that?</p>

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<p style="text-align: right;">Page 18</p> <p>1 A. It's the superset. 2 Q. What would fall within the definition of 3 digital media but not social media? 4 A. Online pornography, online gambling, online 5 shopping, video games. 6 Q. How does -- is social media use different 7 than smartphone use? 8 A. Yes. 9 Q. Okay. And what's the difference? 10 A. Smartphone use refers to the device. And 11 social media refers to a digital media platform that 12 can be accessed from the device. 13 Q. And is social media use different from 14 Internet use? 15 A. Social media use is something that people 16 can do on the Internet, but it's not the only thing 17 that people can do on the Internet. Like, given 18 that people spend -- especially teens spend so much 19 time on social media, I can infer that when they're 20 using the Internet, they're on social media for a 21 good portion of that time. 22 Q. Just to get back to my question, Internet 23 use is a broader concept than social media use; 24 correct? 25 A. Yes.</p>	<p style="text-align: right;">Page 20</p> <p>1 are spending in the context of addictive or 2 problematic use. 3 But you're correct, it's not a formal 4 study, so if you want to use the term "anecdotal," 5 that's okay. 6 BY MR. ERCOLE: 7 Q. Are you aware of any studies that have 8 looked at how much time minors spend on social 9 media? 10 A. Yes. 11 Q. And what studies are those? 12 A. Most recently I looked at a Pew report of 13 what teenagers are doing online, what social media 14 and what media in general they're using most 15 frequently. 16 Q. We'll get into -- I'll probably ask you 17 some questions later about your practice and some of 18 the folks you treat, so we'll put a placeholder 19 there. 20 Let's mark this as Exhibit 1. 21 (Marked for identification purposes, 22 Lembke Exhibit 1.) 23 (Discussion off the stenographic record.) 24 BY MR. ERCOLE: 25 Q. Dr. Lembke, have you seen this document</p>
<p style="text-align: right;">Page 19</p> <p>1 Q. Okay. Have you done -- have you conducted 2 your own study to understand how much time teens 3 spend on social media? 4 A. I've not conducted my own formal study. 5 But I see -- in clinical care, I've done informal 6 assessments of how much time people are spending on 7 social media. 8 Q. And when you say "clinical care," what are 9 you referring to? 10 A. My psychiatric practice. 11 Q. So the patients you see? 12 A. Yes. 13 Q. Okay. So anecdotally based upon treating 14 patients you see, you have a sense of how much time 15 teens spend on the Internet; is that correct? 16 A. No. I wouldn't say that that -- that's my 17 answer to that question. 18 Q. Okay. So anecdotally based on the 19 treatment of patients in your practice, you have an 20 understanding of how much time teens spend on social 21 media; is that correct? 22 MS. McNABB: Objection. Misstates. 23 THE WITNESS: Given my clinical experience 24 working with people of all ages who get addicted to 25 social media, I have a sense of how much time people</p>	<p style="text-align: right;">Page 21</p> <p>1 before? 2 A. I'm not recalling it if I have. 3 Q. Do you see that it's a notice of your 4 deposition, which is taking place today? 5 Do you see that on the first page? 6 A. Yes, I see that. 7 Q. Okay. And if you turn to page 3 of this 8 notice, there's a category entitled "Documents 9 Requested." 10 Do you see that? 11 A. Yes. 12 Q. Have you seen these document requests 13 before? 14 A. I don't understand your question. 15 Q. Have you seen this list of documents 16 requested before? 17 A. A copy of my curriculum vitae, 18 publications, et cetera? 19 Q. Now, I'm asking you -- well, have you ever 20 seen this document before? 21 A. If it's in my materials considered or you 22 know for a fact that I have been given this, then I 23 will take you at your word. I don't remember this 24 specific document. 25 Q. Okay. Do you -- were you -- were you asked</p>

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<p style="text-align: right;">Page 22</p> <p>1 to collect the documents that have been requested 2 here?</p> <p>3 MS. McNABB: Objection. 4 Just to the extent it's getting into 5 attorney-expert privilege, you don't have to ask -- 6 answer the question. 7 THE WITNESS: Okay. Then I won't answer 8 it. 9 BY MR. ERCOLE: 10 Q. Okay. Have you collected the documents 11 requested here? 12 A. Yes, I believe so. 13 Q. And that includes the documents that run 14 from Nos. 1 through 8 on the following page? 15 A. So Nos. 5 and 6, I did not reference any 16 patients in my report, so that was not relevant. 17 And I -- we don't use a patient -- I 18 actually don't know what you mean by "patient intake 19 form or questionnaire." I'm not sure what that's 20 referring to. 21 Q. So other than Categories 5 and 6, have you 22 collected the other documents responsive to these 23 requests? 24 A. I believe so, yes. 25 Q. And did you provide those to your counsel?</p>	<p style="text-align: right;">Page 24</p> <p>1 MS. McNABB: Objection to scope. 2 THE WITNESS: Are you asking me if I 3 possess notes and records from patients that I've 4 treated with social media addiction? 5 BY MR. ERCOLE: 6 Q. Yes. 7 A. I have individual HIPAA-protected notes and 8 records, yes. 9 Q. And you haven't collected those and 10 provided those to your counsel; correct? 11 A. Of course not. 12 Q. You also -- Request No. 6 refers to a 13 current patient intake form or questionnaire for the 14 last three years. 15 Do you see that? 16 A. I do see that. 17 Q. And I think you said you don't have a -- 18 you don't use a patient intake form or 19 questionnaire; is that right? 20 MS. McNABB: Objection to scope. 21 THE WITNESS: No, I didn't say that. I 22 began to say that, and then I realized that I don't 23 know what -- what you mean here by "patient intake 24 form or questionnaire." That can have many 25 different meanings.</p>
<p style="text-align: right;">Page 23</p> <p>1 A. Yes. 2 Q. And with respect to Request No. 5, do you 3 have -- so it says (as read): 4 "Any and all documents related to any 5 opinions based on clinical experience, 6 including notes and records from patients 7 referencing your April 18th, 2025, expert 8 report." 9 Do you see that? 10 A. I do see that, yes. 11 Q. And do you have notes and records from 12 patients that you treated for what you refer to as 13 "social media addiction"? 14 MS. McNABB: Objection to scope. 15 THE WITNESS: I don't reference any 16 individual patients in my report, so to me that is 17 not relevant. 18 BY MR. ERCOLE: 19 Q. Okay. Do you recall my question, 20 Dr. Lembke? 21 A. I think I do, yeah. 22 Q. Okay. Do you have -- I'll repeat it. 23 Do you have notes and records from patients 24 that you have treated for what you refer to as 25 "social media addiction"?</p>	<p style="text-align: right;">Page 25</p> <p>1 So you really have to be more specific -- 2 BY MR. ERCOLE: 3 Q. Okay. 4 A. -- for me to be able to answer that 5 question. 6 Q. So if a patient comes in to be treated by 7 you, is there an intake form or questionnaire that 8 that patient has to fill out? 9 MS. McNABB: Objection to scope. 10 THE WITNESS: There is a multilayered 11 process to be seen in our clinic. It begins with a 12 call to an intake coordinator who does an initial 13 screening about their mental health condition and 14 what kind of help they're looking for and then uses 15 that to triage them to the correct clinic as well as 16 exploring their insurance and how they're going to 17 pay for that. 18 Recently, the Department of Psychiatry at 19 Stanford University has implemented a PHQ-9, patient 20 survey questionnaire, given to all new patients to 21 assess baseline characteristics regarding mood and 22 suicidal ideation. 23 And then my clinic, which I -- in which I 24 see patients but also which I oversee other 25 physicians seeing patients, some of those physicians</p>

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<p style="text-align: right;">Page 26</p> <p>1 will use various survey instruments, scales, as they</p> <p>2 prefer for their particular mode of practice. It's</p> <p>3 quite common to use survey scales to assess</p> <p>4 different patient symptomatology.</p> <p>5 I personally don't use survey scales, and</p> <p>6 I -- and I say that in my report.</p> <p>7 BY MR. ERCOLE:</p> <p>8 Q. So for the -- for the patients that come to</p> <p>9 see you, you do not use survey scales; is that</p> <p>10 correct?</p> <p>11 A. I'm not one to use -- typically to use</p> <p>12 survey scales. But the questions that I ask are</p> <p>13 very similar and in some cases identical to the --</p> <p>14 to the questions on, for example, the Bergen social</p> <p>15 media survey or the social media disorder survey.</p> <p>16 Q. So for any patients that come to you and</p> <p>17 that -- sorry.</p> <p>18 Any patients that you treat specifically,</p> <p>19 there is no written documentation responding to a</p> <p>20 social media scale or a questionnaire; is that fair?</p> <p>21 MS. McNABB: Objection. Scope.</p> <p>22 THE WITNESS: I'm sorry. Can you repeat</p> <p>23 the question?</p> <p>24 BY MR. ERCOLE:</p> <p>25 Q. Sure.</p>	<p style="text-align: right;">Page 28</p> <p>1 BY MR. ERCOLE:</p> <p>2 Q. And in this -- in this litigation for the</p> <p>3 JCP [sic], you are not giving opinions about any</p> <p>4 particular individuals; is that correct?</p> <p>5 MS. McNABB: Objection.</p> <p>6 THE WITNESS: I'm not talking about any</p> <p>7 individual patients. I'm talking about general</p> <p>8 causation.</p> <p>9 But my opinion is informed by my experience</p> <p>10 of seeing many individual patients over many years.</p> <p>11 BY MR. ERCOLE:</p> <p>12 Q. Exactly.</p> <p>13 And you reference that clinical experience</p> <p>14 in your report; correct?</p> <p>15 A. Yes, I do.</p> <p>16 Q. And we'll show you some of those pages</p> <p>17 later.</p> <p>18 But even though you -- and even though</p> <p>19 you're relying upon your clinical experience and</p> <p>20 what you've gathered from the patients you've</p> <p>21 treated, you haven't produced any documents</p> <p>22 reflecting any of the records or notes of those</p> <p>23 patients; right?</p> <p>24 MS. McNABB: Objection. Scope.</p> <p>25 THE WITNESS: That's because I'm relying on</p>
<p style="text-align: right;">Page 27</p> <p>1 For patients who you treat, there's no</p> <p>2 written response or to -- strike that.</p> <p>3 For patients that you treat, there's no</p> <p>4 written response or documentation where they filled</p> <p>5 out some type of social media addiction scale; is</p> <p>6 that correct?</p> <p>7 MS. McNABB: Same objection.</p> <p>8 THE WITNESS: Your question is compound.</p> <p>9 I'm not quite sure how to answer it yes or no. But</p> <p>10 I will say that I do not use a social media</p> <p>11 addiction scale in my practice.</p> <p>12 BY MR. ERCOLE:</p> <p>13 Q. Okay. And as a result, there's no</p> <p>14 documents for -- there would be no documents for you</p> <p>15 to collect in response to this particular request</p> <p>16 with respect to social media addiction scales filled</p> <p>17 out by your patients; right?</p> <p>18 MS. McNABB: Same objection.</p> <p>19 THE WITNESS: We have lots of</p> <p>20 documentation. They're HIPAA protected. We don't</p> <p>21 practice in the absence of documentation.</p> <p>22 So there's lots of documentation about</p> <p>23 social media addiction in a given individual</p> <p>24 patient, which is part of their private healthcare</p> <p>25 file.</p>	<p style="text-align: right;">Page 29</p> <p>1 my clinical experience in aggregate.</p> <p>2 BY MR. ERCOLE:</p> <p>3 Q. Other than the three binders of documents</p> <p>4 that we talked about, did you bring any other</p> <p>5 documents with you here today?</p> <p>6 A. No.</p> <p>7 Q. You're providing testimony here today in</p> <p>8 connection with your JCCP expert report; right?</p> <p>9 A. That is correct.</p> <p>10 Q. Are you aware of any of the names of the</p> <p>11 JCC bellwether plaintiffs?</p> <p>12 A. Are you asking me if I'm aware of any of</p> <p>13 the individuals who are plaintiffs in this case?</p> <p>14 Q. Yes.</p> <p>15 A. No, I am not.</p> <p>16 Q. So do you -- have you ever spoken with any</p> <p>17 individuals who are plaintiffs in this case?</p> <p>18 MS. McNABB: Objection to scope.</p> <p>19 THE WITNESS: I have not spoken to any</p> <p>20 individual plaintiffs in this case.</p> <p>21 BY MR. ERCOLE:</p> <p>22 Q. Have you ever evaluated any of the</p> <p>23 individual plaintiffs in this case?</p> <p>24 MS. McNABB: Objection to scope.</p> <p>25 THE WITNESS: I have not evaluated any</p>

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<p style="text-align: right;">Page 30</p> <p>1 individual patients in this case. 2 BY MR. ERCOLE: 3 Q. Have you ever reviewed any of their medical 4 records? 5 MS. McNABB: Objection to scope. 6 THE WITNESS: I have not reviewed their 7 medical records. 8 BY MR. ERCOLE: 9 Q. Are you planning to give trial testimony in 10 this case? 11 MS. McNABB: Objection. Scope. 12 Speculation. 13 THE WITNESS: I'm giving trial testimony on 14 general causation, not on any one individual case. 15 BY MR. ERCOLE: 16 Q. Right. 17 But you understand that if you're in trial, 18 it's in connection with an individual case; right? 19 MS. McNABB: Objection. Speculation. 20 THE WITNESS: My understanding is that 21 there are individual plaintiffs in this case. 22 BY MR. ERCOLE: 23 Q. And you plan to give trial testimony in 24 this case; right? 25 A. Yes, I do.</p>	<p style="text-align: right;">Page 32</p> <p>1 give -- be any more precise there? 2 A. Probably not. 3 MR. ERCOLE: Can we mark this as Exhibit 2? 4 (Marked for identification purposes, 5 Lembke Exhibit 2.) 6 BY MR. ERCOLE: 7 Q. Dr. Lembke, have you seen these documents 8 before? 9 A. I created these documents. So, yes. 10 Q. All right. What are they? 11 A. They're my invoices. 12 Q. And are they invoices for the 13 JCCP -- strike that. 14 Are these invoices for the JCCP case or for 15 the MDL case or both? 16 A. It's hard for me to say for sure. I'm not 17 recalling whether I was initially retained for the 18 MDL or the JCC. But my reports in both cases are 19 quite similar, so probably the best answer is to say 20 for both. 21 Q. And, sorry, I should have been more precise 22 too. 23 But when we're talking about MDL, I'm -- I 24 will be referring to the federal MDL case. 25 Is that okay with you?</p>
<p style="text-align: right;">Page 31</p> <p>1 Q. And you plan to give trial testimony in 2 this case even though you -- sitting here today, you 3 can't identify the name of a single plaintiff? 4 MS. McNABB: Objection. Scope. 5 THE WITNESS: My role in this case does not 6 require me to evaluate a single individual 7 plaintiff. 8 BY MR. ERCOLE: 9 Q. Or know their names; right? 10 MS. McNABB: Objection. Badgering. 11 BY MR. ERCOLE: 12 Q. Dr. Lembke, when were you first contacted 13 about serving as an expert in the social media 14 litigation at large, whether this case or the MDL 15 case? 16 MS. McNABB: Objection. Form. 17 THE WITNESS: Fall of 2023, I believe. 18 BY MR. ERCOLE: 19 Q. Who contacted you? 20 A. The lawyers of Lieff Cabraser Heimann 21 & Bernstein, Lexi Hazam and Don Arbitblit. 22 (Stenographer interrupted for clarification 23 of the record.) 24 BY MR. ERCOLE: 25 Q. And when you say "fall of 2023," can you</p>	<p style="text-align: right;">Page 33</p> <p>1 A. Yes. 2 Q. Okay. And so that we're on the same page 3 with respect to that definition; right? 4 A. Yes. 5 Q. Okay. And so if you look on -- and are 6 these all of the invoices that you have created and 7 submitted to date? 8 A. Yes, I believe so. 9 Q. And it looks like from this document the 10 first recorded entry is from February 8, 2023; is 11 that correct? On the first page? 12 A. Yes. That's correct. 13 Q. Okay. 14 A. Yeah. So clearly I was wrong about it 15 being the fall. It was February. 16 Q. Would you have been contacted before you 17 first started reviewing records in this case? 18 A. I don't remember the exact sequence of 19 events. Typically, I would get a call asking 20 whether or not I was interested and then records 21 would follow. 22 Q. Do you know when you first learned that 23 there were individuals planning to sue social media 24 companies over addiction issues? 25 MS. McNABB: Objection. Scope.</p>

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<p style="text-align: right;">Page 34</p> <p>1 THE WITNESS: I believe my first awareness 2 was when Lieff Cabraser reached out to me and asked 3 me if I would be an expert witness. So 4 February 2023 or thereabouts, but I'm not sure. 5 BY MR. ERCOLE: 6 Q. We may come back to this document, but we 7 can put it aside for -- for the moment. 8 You submitted a expert report on 9 April 18th, 2025, in the JCCP cases; correct? 10 A. Correct. 11 MR. ERCOLE: Let's mark this as Exhibit 3. 12 (Marked for identification purposes, 13 Lembke Exhibit 3.) 14 BY MR. ERCOLE: 15 Q. Dr. Lembke, is this a copy of the report 16 that you submitted in the JCCP case? If you mind 17 just taking a quick look. 18 A. Yes. 19 Q. I'm not trying to trick you on anything 20 here. That's my understanding, this is what you 21 were -- that was served on your behalf there. 22 And is this the only report that you've 23 submitted in the JCCP cases? 24 A. Correct. 25 Q. You have not submitted a rebuttal report in</p>	<p style="text-align: right;">Page 36</p> <p>1 A. No. 2 Q. What was the difference between the two 3 reports? 4 A. I added a brief description of one study. 5 I added a quote from one TikTok employee. And I 6 made a slight reordering of the paragraphs in 7 Opinion 5 for better flow. 8 Q. Any changes beyond the ones that you just 9 identified? 10 A. No, I don't believe so. 11 Q. So if you look to -- on page 2 of your JCCP 12 report -- and for today we're probably -- since it's 13 the JCCP case, I'm going to focus on your JCCP 14 report. So probably ask a lot of questions about 15 what's in the -- what's Exhibit 3 and -- what my 16 understanding would be, in the binder that you're 17 looking at; okay? 18 A. Yes. That's okay. 19 Q. So if you turn to page 2, there's a caption 20 that says "Opinions." 21 Do you see that? 22 A. Yes. 23 Q. And it says (as read): 24 "For the reasons set forth in detail 25 in this report, I hold the following</p>
<p style="text-align: right;">Page 35</p> <p>1 the JCCP cases; is that correct? 2 A. Correct. 3 Q. You also submitted an expert report in the 4 MDL litigation on May 16th; is that right? 5 A. Correct. 6 Q. And what is your -- did anything in the MDL 7 report contradict or change any of the opinions in 8 your JCCP report? 9 A. No. 10 Q. Did anything in your MDL report cite to or 11 discuss any of the defense expert reports that were 12 issued in the JCCP? 13 A. Yes. 14 Q. What did your MDL report -- 15 A. I'm sorry. Can you ask that question 16 again? 17 Q. Yeah, sure. No problem. 18 A. I think I misunderstood it. 19 Q. Did anything in your MDL report contra- ... 20 Did anything in your MDL report cite to or 21 discuss any of the defense expert reports that were 22 submitted in the JCCP? 23 A. Not specifically. 24 Q. Did you make any new opinions in your MDL 25 report that were not in your JCCP report?</p>	<p style="text-align: right;">Page 37</p> <p>1 opinions." 2 Is that right? 3 A. Yes. 4 Q. And does this section encapsulate the 5 opinions that you're giving in this litigation? 6 A. Yes. 7 Q. You have not offered any other opinions 8 beyond the five that are listed there; correct? 9 A. I mean, the report is interspersed with 10 opinions, but this is the summary of those opinions. 11 Q. Fair enough. 12 All the interspersed language sort of fall 13 within the five bucketed opinions that are laid out 14 in the summary; correct? 15 A. I think that's fair. But I am here with 16 the entirety of my report. I wouldn't want just 17 these five opinions to be all that there is to 18 represent my opinion. 19 Q. Fair enough. 20 Anything -- you're not giving any other 21 opinions than what's encapsulated in Exhibit 3 and 22 your JCCP report; right? 23 A. That's correct. 24 MS. McNABB: Object. I -- I'll just lay my 25 objection to that.</p>

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<p style="text-align: right;">Page 38</p> <p>1 THE WITNESS: Okay.</p> <p>2 I could add to that that I have read some</p> <p>3 of defendants' experts' reports, and I do have</p> <p>4 opinions in response to their reports. I did not</p> <p>5 write or submit a rebuttal report, but I do have</p> <p>6 opinions with regards to their opinions.</p> <p>7 BY MR. ERCOLE:</p> <p>8 Q. Those -- the opinions you're referencing</p> <p>9 right now with respect to defendants' experts, those</p> <p>10 are not contained in the -- what's Exhibit 3;</p> <p>11 correct?</p> <p>12 I'll rephrase that question.</p> <p>13 A. Yeah.</p> <p>14 Q. Those -- the opinions that you're</p> <p>15 referencing right now with respect to defendants'</p> <p>16 experts are not contained in your JCCP expert</p> <p>17 report, which is Exhibit 3; right?</p> <p>18 A. I wouldn't quite phrase it like that. My</p> <p>19 rebuttal to their opinions is expressed in myriad</p> <p>20 ways in the report that I've already issued in this</p> <p>21 case. But I do have other responses and</p> <p>22 clarifications, if -- if asked, in -- you know, with</p> <p>23 regards to their reports and also their rebuttal of</p> <p>24 my reports.</p> <p>25 Q. There's -- in your -- and I'm -- your JCCP</p>	<p style="text-align: right;">Page 40</p> <p>1 is part of any draft report or attorney-expert</p> <p>2 communication, you don't need to answer that.</p> <p>3 MR. ERCOLE: You're instructing her not to</p> <p>4 answer whether she's -- whether she's written any</p> <p>5 rebuttal report?</p> <p>6 MS. McNABB: To the extent it's part of a</p> <p>7 draft report or attorney-expert privilege.</p> <p>8 MR. ERCOLE: Okay.</p> <p>9 MS. McNABB: So she can answer "yes" or</p> <p>10 "no," but to go into if it was part of anything that</p> <p>11 could potentially be for the MDL. I'm going to</p> <p>12 instruct her not to answer that as protected under</p> <p>13 Rule 26.</p> <p>14 BY MR. ERCOLE:</p> <p>15 Q. Okay. Is there anything -- well, I'm going</p> <p>16 to ask the question, and then you can figure out</p> <p>17 whether you want to answer it or not.</p> <p>18 Do you have -- have you written any -- have</p> <p>19 you done any -- strike that.</p> <p>20 Have you written any analysis of the</p> <p>21 defense expert reports that you've -- you just</p> <p>22 referenced?</p> <p>23 A. I've not written a rebuttal report.</p> <p>24 Q. Have you written anything -- any -- strike</p> <p>25 that.</p>
<p style="text-align: right;">Page 39</p> <p>1 report is Exhibit 3.</p> <p>2 So in Exhibit 3, there's no section that</p> <p>3 addresses defendants' experts; right?</p> <p>4 A. That is correct.</p> <p>5 Q. Okay. Which defendant expert reports did</p> <p>6 you look at?</p> <p>7 A. I looked at Tucker, Kishida, Auerbach, and</p> <p>8 one other starting with an M that I'm not recalling</p> <p>9 right now.</p> <p>10 I -- let me -- let me take a look at my</p> <p>11 materials considered.</p> <p>12 Okay. So Douglas Tucker, Randy Auerbach,</p> <p>13 Adriana Galván, Kenneth Kishida.</p> <p>14 Q. And what -- you were looking at a binder, a</p> <p>15 document in a binder that you brought in with you</p> <p>16 today?</p> <p>17 A. Yes.</p> <p>18 Q. And has that document in that binder been</p> <p>19 produced in this case?</p> <p>20 A. Yes, it has.</p> <p>21 Q. Okay. Have you written any type of</p> <p>22 rebuttal analysis to those experts you just</p> <p>23 identified?</p> <p>24 MS. McNABB: Objection.</p> <p>25 Just for the record, to the extent that it</p>	<p style="text-align: right;">Page 41</p> <p>1 Have you written any type of analysis with</p> <p>2 respect to those defense expert reports that you</p> <p>3 just identified?</p> <p>4 MS. McNABB: Same objection.</p> <p>5 THE WITNESS: Yeah, I think that's -- I</p> <p>6 don't have to answer that because of confidential</p> <p>7 privilege discussions with my lawyers.</p> <p>8 BY MR. ERCOLE:</p> <p>9 Q. All right. Well, we may disagree on that.</p> <p>10 So I just want to know, are you -- you're</p> <p>11 not going to answer that question?</p> <p>12 A. I'm not going to answer that question.</p> <p>13 Q. Okay. All right. So we'll get into, I</p> <p>14 guess, some of the -- some of your analysis of the</p> <p>15 defense experts a little bit later.</p> <p>16 For the JCCP case, are you aware of whether</p> <p>17 any -- strike that.</p> <p>18 Are you aware of how much any bellwether</p> <p>19 plaintiff in the JCCP used social media?</p> <p>20 MS. McNABB: Objection. Scope.</p> <p>21 THE WITNESS: Again, I have not evaluated</p> <p>22 any individual plaintiffs. I'm looking at general</p> <p>23 causation.</p> <p>24 BY MR. ERCOLE:</p> <p>25 Q. Okay. So with respect to any individual</p>

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<p style="text-align: right;">Page 42</p> <p>1 plaintiffs, you can't -- there's nothing that you 2 could tell me about them; is that correct? 3 A. I could tell you a lot if you wanted to 4 provide me with the information, but that was not 5 what I was asked to do. 6 Q. Right. 7 But sitting here today, because I am the 8 one that gets to ask you the questions, you can't 9 give me any information about any bellwether 10 plaintiff in the JCCP; is that right? 11 MS. McNABB: Objection. Scope. 12 THE WITNESS: I can give you information 13 about them based on my knowledge of social media 14 use, social media addiction, but I have not looked 15 at any documents related to any individual 16 plaintiffs. I have not looked at their personal 17 histories or diagnoses or medical documentation. I 18 have not evaluated those documents. 19 BY MR. ERCOLE: 20 Q. You don't know what was going on in their 21 lives -- 22 MS. McNABB: Objection. Scope. 23 BY MR. ERCOLE: 24 Q. -- whatsoever; right? 25 A. I disagree with that. I don't know on an</p>	<p style="text-align: right;">Page 44</p> <p>1 THE WITNESS: I can give you information 2 based on my knowledge of the phenomenology of these 3 various mental illnesses. But I can't speak to 4 their individual cases because I was not asked to do 5 that. 6 BY MR. ERCOLE: 7 Q. You don't know whether, for instance, any 8 of the JCCP plaintiffs had difficult home life 9 experiences, for instance? 10 MS. McNABB: Objection. Scope. 11 THE WITNESS: I have general knowledge 12 that -- that some of them had difficult home life 13 experiences. I have some general knowledge of the 14 types of mental health disorders and adverse mental 15 health consequences they suffered as a result of 16 their use of social media. 17 BY MR. ERCOLE: 18 Q. Can you tell me -- can you tell me how much 19 any JCCP plaintiff was using any particular social 20 media platform? 21 MS. McNABB: Objection. Scope and asked 22 and answered. 23 THE WITNESS: Yeah. I -- not at that level 24 of detail, no. 25 ///</p>
<p style="text-align: right;">Page 43</p> <p>1 individual level, but mental illness is based on 2 phenomenology, patterns of behavior that repeat 3 themselves over time. And I can -- 4 (Stenographer interrupted for clarification 5 of the record.) 6 THE WITNESS: Behavior that repeat 7 themselves over time. 8 And I can speak to the phenomenology of 9 these various mental illnesses in question, 10 including social media addiction. 11 BY MR. ERCOLE: 12 Q. Okay. But at least sitting here today, 13 right, because this is my chance to get to depose 14 you in advance of trial in the JCCP, you -- you 15 can't -- can you -- can you give me any information 16 about what was going on in the lives of any of the 17 particular JCCP plaintiffs? 18 MS. McNABB: Objection. Scope. 19 THE WITNESS: Sure. I can give you a lot 20 of information about that. 21 BY MR. ERCOLE: 22 Q. Okay. So why don't we -- why don't you 23 identify one of the JCCP plaintiffs, and then tell 24 me what was going on in his or her life. 25 MS. McNABB: Objection. Scope.</p>	<p style="text-align: right;">Page 45</p> <p>1 BY MR. ERCOLE: 2 Q. Did you write the entirety of your JCCP 3 report? 4 A. Yes. 5 Q. Did you have support in preparing your 6 report? 7 A. What do you mean by "support"? 8 Q. Did anyone help you in preparing your 9 report? 10 MS. McNABB: Brian, I will object to the 11 extent that you are asking for attorney-expert 12 privilege or draft report information, which is 13 protected under Rule 26 that was adopted in the 14 JCCP. 15 BY MR. ERCOLE: 16 Q. My question just asked if you -- it's a 17 "yes/no" question. 18 Did you have support in preparing your 19 report? 20 MS. McNABB: So, Anna, you can -- you can 21 answer "yes" or "no," but don't go into detail. 22 THE WITNESS: Okay. 23 Can you say the question again? 24 BY MR. ERCOLE: 25 Q. Yeah.</p>

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<p style="text-align: right;">Page 46</p> <p>1 Did you have support in preparing your JCCP</p> <p>2 report?</p> <p>3 A. Yes.</p> <p>4 Q. And from whom did you have support?</p> <p>5 A. From the team of lawyers that I've been</p> <p>6 working with, from their reference librarians. When</p> <p>7 I asked for documents or articles that I couldn't</p> <p>8 find on my own through Lane Library or other</p> <p>9 Stanford resources.</p> <p>10 Q. Have you ever heard the name Fred Gilbert</p> <p>11 before, Dr. Lembke?</p> <p>12 A. I'm not good with names, but it doesn't</p> <p>13 ring a bell.</p> <p>14 Q. So Exhibit B to your report is a list of</p> <p>15 the materials that -- I just want to make sure I get</p> <p>16 this right -- that you considered; is that correct?</p> <p>17 A. Yes.</p> <p>18 Q. And if you go to -- let's make sure I get</p> <p>19 there.</p> <p>20 So Exhibit -- it says B -- I'm sorry.</p> <p>21 The Exhibit B to your report, I guess B1,</p> <p>22 references "Materials Considered."</p> <p>23 Do you see that?</p> <p>24 A. Exhibit B, Materials Considered.</p> <p>25 Q. Yeah.</p>	<p style="text-align: right;">Page 48</p> <p>1 Q. And did you choose the studies listed here</p> <p>2 because, in your view, they capture the strengths</p> <p>3 and limitations of the -- of the -- of the data?</p> <p>4 A. Yes.</p> <p>5 Q. Were there any scholarly publications or</p> <p>6 studies that you reviewed in creating your report</p> <p>7 but that you omitted from your Materials Considered</p> <p>8 list?</p> <p>9 A. I tried to include everything that I</p> <p>10 considered.</p> <p>11 Q. Sitting here today, there's nothing that</p> <p>12 you can identify to me that you omitted from</p> <p>13 inclusion in this list; right?</p> <p>14 A. That's correct.</p> <p>15 Q. What percentage of the -- of the 195 listed</p> <p>16 materials were provided to you by counsel?</p> <p>17 A. I don't know the exact percentage. I would</p> <p>18 say it's a small percentage. And this is literature</p> <p>19 that I've been reviewing for a long time.</p> <p>20 Q. The next section of Exhibit B, then, talks</p> <p>21 about -- once you get through the 195 articles,</p> <p>22 there's a title that says, I think it's B15,</p> <p>23 "Deposition Testimony and Exhibits."</p> <p>24 Do you see that?</p> <p>25 A. Yes.</p>
<p style="text-align: right;">Page 47</p> <p>1 A. Yes, I see that.</p> <p>2 Q. Okay. And it starts with, like, 195 listed</p> <p>3 materials; is that right?</p> <p>4 A. Yes.</p> <p>5 Q. And this list includes scientific and</p> <p>6 academic studies; right?</p> <p>7 A. Yes.</p> <p>8 Q. And how did you choose what went on when --</p> <p>9 excuse me. How did -- strike that.</p> <p>10 How did you choose what went into this</p> <p>11 list?</p> <p>12 A. Well, first of all, what's in this list</p> <p>13 includes material that I have been gathering and</p> <p>14 researching predating my involvement in social media</p> <p>15 litigation.</p> <p>16 And I have a systematic approach for</p> <p>17 reviewing literature. I use keywords to find</p> <p>18 articles.</p> <p>19 I then screen titles and abstracts to</p> <p>20 choose the most relevant articles.</p> <p>21 I then read the articles that seem most</p> <p>22 relevant to what I'm trying to figure out, including</p> <p>23 relevant articles that ultimately agreed with my</p> <p>24 opinion, as well as articles that ultimately didn't</p> <p>25 support my opinion.</p>	<p style="text-align: right;">Page 49</p> <p>1 Q. How did you select which depositions from</p> <p>2 the litigation that you would review?</p> <p>3 A. I asked for depositions that had any</p> <p>4 content related to social media addiction,</p> <p>5 problematic social media use, or any other synonym</p> <p>6 of those.</p> <p>7 I asked for depositions that specifically</p> <p>8 referenced the sort of addictive design elements</p> <p>9 related to access, quantity, potency, novelty, and</p> <p>10 certainty.</p> <p>11 I asked for documents that related to what</p> <p>12 I call in my report the four Cs of addiction:</p> <p>13 control, compulsions, cravings, and consequences, as</p> <p>14 well as tolerance and withdrawal.</p> <p>15 And when I read something that left me with</p> <p>16 more questions, I -- I followed up asking for more</p> <p>17 relevant documents or more specific documents</p> <p>18 related to those documents.</p> <p>19 Q. And there are approximately 40 or 41</p> <p>20 depositions that are listed on this list.</p> <p>21 Did you -- were you given the full</p> <p>22 transcript for every deposition?</p> <p>23 A. Yes.</p> <p>24 Q. Did you read every page of that -- of those</p> <p>25 transcripts?</p>

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<p style="text-align: right;">Page 50</p> <p>1 A. It depended on the deposition. Sometimes I 2 read every page; sometimes I didn't. 3 Q. Do you know which ones you read in full? 4 A. I can't now recall, but I read in full the 5 ones that were most relevant. 6 Q. Were you given every exhibit for each 7 deposition? 8 A. Yes. 9 Q. So you received the depositions and then 10 all of the exhibits referenced in that deposition; 11 is that correct? 12 A. Yes, typically. 13 Q. Did you review every exhibit for each 14 deposition? 15 A. No. 16 Q. Did you ask to see any of the plaintiffs' 17 deposition? 18 A. The plaintiffs' depositions have just 19 started. 20 Q. Is that your understanding? 21 A. That's my understanding, yeah. 22 Q. Did you ask to see any of those 23 depositions? 24 A. So just to make sure I'm understanding your 25 question, in this case the plaintiffs' experts have</p>	<p style="text-align: right;">Page 52</p> <p>1 A. Yes. 2 Q. Do you know how many documents were 3 produced in this litigation? 4 A. In terms of defendants' documents? 5 Q. Yes. 6 A. No. 7 Q. Do you know whether more than a million 8 documents have been produced in this case? 9 A. I don't know, but that wouldn't surprise 10 me. 11 Q. And you reviewed 400 of them; is that 12 right? 13 A. I believe it's 600. 642. 14 Q. There's 642. But if you go to page B19, 15 production Bates number documents. 16 Do you see that? 17 A. Yes. 18 Q. And so it looks like for internal 19 documents, you reviewed -- you reviewed the 20 documents that run from No. 255 to 642; right? 21 A. Oh, yes. You're correct. 22 Q. And that's a little under 400; right? 23 A. I believe you on the math. 24 Q. I'm terrible with math, but I think -- I 25 think that's right.</p>
<p style="text-align: right;">Page 51</p> <p>1 been deposed, like I'm being deposed now, and you're 2 asking me if I asked to see their depositions? 3 Q. No. My -- sorry. My question is a little 4 bit different -- 5 A. Okay. 6 Q. -- which is there are depositions of the 7 plaintiffs; correct? 8 Strike that. 9 There are plaintiffs and there's 10 plaintiffs' experts -- 11 A. Right. 12 Q. -- right? 13 And then there's defendants and defendants' 14 experts; right? 15 A. Right. 16 Q. So how about for the plaintiffs themselves, 17 did you ask to see any of their depositions? 18 A. I did not. 19 Q. And there are about 400, it looks like, 20 company documents produced from the defendants and 21 third parties in this case that are on your 22 Materials Considered list; is that fair? 23 A. Yes. 24 Q. Do you know how many -- and those documents 25 cover all of the defendants in this case; right?</p>	<p style="text-align: right;">Page 53</p> <p>1 A. You did it before. 2 Q. How did you select which document -- how 3 did you select which documents to review? 4 A. I used the same criteria that I told you 5 before about which depositions I selected. I can go 6 through it again. Would you like me to? 7 Q. Yeah. Just for these particular -- 8 A. Sure. 9 Q. -- on the -- on the -- 10 A. Yeah. 11 Q. -- documents in -- 12 A. Yeah. 13 Q. -- company documents, in particular, what 14 did you ask for? 15 A. I asked for any documents relating to 16 social media addiction, problematic social media 17 use, or any synonyms for those terms. 18 I asked for documents that spoke to the 19 addictive design elements, which I identify in my 20 report as "access, quantity, potency, novelty, 21 uncertainty." 22 I asked for any documents that spoke to the 23 criteria on which we base the diagnosis of 24 addiction, which I summarize as the four Cs: 25 control use, impulsive use, craving, and continued</p>

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<p style="text-align: right;">Page 54</p> <p>1 use despite consequences, as well as tolerance and 2 withdrawal. 3 Q. And in response to those requests, all of 4 the documents that are listed on your -- on your 5 Materials Considered list that are internal company 6 documents, those were all provided by your counsel, 7 right, in response to your request? 8 A. That is correct. 9 Q. Did you have access to a database that 10 would allow you to search for documents with key 11 terms that you wanted to use? 12 A. I might have had access. But I didn't ask 13 for that. 14 Q. Are there any company documents that you 15 looked at or considered that are not listed on your 16 Materials Considered list, to the best of your 17 knowledge? 18 A. No. 19 Q. Did you review every document on this list? 20 A. Yes. 21 Q. Did you read every document -- strike that. 22 Did you read every page of each document? 23 A. I tried to. Some of these documents are 24 very short. 25 Q. Any updates that you'd like to make to your</p>	<p style="text-align: right;">Page 56</p> <p>1 Lembke 0095. 2 (Stenographer interrupted for clarification 3 of the record.) 4 BY MR. ERCOLE: 5 Q. Dr. Lembke, I'll represent to you this is 6 a -- this is a printout of what was provided to us 7 last -- on Friday of last week with respect to your 8 Materials Considered list. 9 With that representation, is there anything 10 on this -- anything on your -- that you've omitted 11 from your Materials Considered list that you 12 produced last Friday? 13 A. I'm sorry. Could you ask the question 14 again? 15 Q. Yeah. 16 Is there anything that is not included on 17 this Materials Considered list that you produced 18 last Friday that should be included? 19 A. Not that I'm aware of. 20 Q. Thank you. 21 You charge -- am I correct that you charge, 22 in terms of compensation, a thousand dollars an hour 23 for time spent in depositions and appearing in 24 court? 25 A. Correct.</p>
<p style="text-align: right;">Page 55</p> <p>1 Materials Considered list sitting here today? 2 MS. McNABB: Objection. 3 I'll let the witness answer, but we did 4 produce what we produced on Friday, so you all have 5 that. 6 THE WITNESS: I'm sorry. Can you repeat 7 your question? 8 BY MR. ERCOLE: 9 Q. Yeah, sure. 10 Any updates to the -- your Materials 11 Considered list that you would like to make today? 12 A. I would like my Materials Considered list 13 to include my materials that were added for the 14 federal case, which were just a few things, but that 15 should be in my Materials Considered list. 16 MR. ERCOLE: Let's mark this as 4. 17 (Marked for identification purposes, 18 Lembke Exhibit 4.). 19 BY MR. ERCOLE: 20 Q. Dr. Lembke, I'm showing you what's marked 21 as Exhibit 4. And this is an updated version of 22 what looks like your résumé and the Materials 23 Considered list that was produced to us last Friday. 24 A. M-hm. 25 Q. And it's Bates-marked Lembke 009 through</p>	<p style="text-align: right;">Page 57</p> <p>1 Q. And you charge \$800 an hour for time spent 2 writing your report and reviewing documents? 3 A. Correct. 4 Q. And you do you also get paid to travel to 5 depositions? 6 A. That hasn't come up. I don't know the 7 answer. 8 Q. Will you get paid -- do you get paid to -- 9 would you get paid if you have to travel to court? 10 A. You mean paid for my travel time? 11 Q. Yes. 12 A. I don't believe so, no. 13 Q. So you -- your understanding is you don't 14 get paid at all for your travel time; is that right? 15 A. That's my understanding. 16 Q. So if we turn back to Exhibit 2, which are 17 your invoices, if you look at the first page, 18 there's a -- all of the entries are from February of 19 2023. 20 Do you see that? 21 A. Yeah. 22 Q. And then it looks like the next invoice 23 begins April of 2024. 24 Do you see that? 25 A. Yes.</p>

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<p style="text-align: right;">Page 58</p> <p>1 Q. And so that's over a year later; is that 2 right?</p> <p>3 A. Yes.</p> <p>4 Q. Okay. Were you doing any work on this case 5 between then?</p> <p>6 MS. McNABB: I will object just to the 7 extent that it gets into attorney-client -- or, 8 excuse me, attorney-expert privilege.</p> <p>9 So if there were communications about why 10 and what, you don't have to answer that. But his 11 direct question right now, you --</p> <p>12 And, Brian, you can reask it.</p> <p>13 You can answer "yes" or "no."</p> <p>14 THE WITNESS: Okay.</p> <p>15 BY MR. ERCOLE:</p> <p>16 Q. Were you doing any work on this case 17 between February 12th, 2023, and April 11th, 2024?</p> <p>18 A. If I didn't bill for it, I wasn't doing 19 work specifically on this case. But all along, I am 20 reading the literature related to this case. I am 21 doing my own work.</p> <p>22 Q. Have you been paid for all of these 23 invoices?</p> <p>24 A. I think so, yes.</p> <p>25 Q. Do you know how much you've been paid to</p>	<p style="text-align: right;">Page 60</p> <p>1 Drug Dealer, MD, preceded, or came before, my being 2 retained in opioid litigation.</p> <p>3 BY MR. ERCOLE:</p> <p>4 Q. And if I could -- for purposes of just 5 making this easy, if I refer to the opioid 6 litigation, would you understand I'm referring to 7 sort of all the various cases that were brought 8 against the companies involved with the 9 manufacturing, distribution, and dispensing of 10 opioid medication?</p> <p>11 A. Yes.</p> <p>12 Q. You earned -- and the title of your book 13 was Drug Dealer, MD; is that correct?</p> <p>14 A. That's right.</p> <p>15 Q. And you earned money on that book; right?</p> <p>16 A. Yes.</p> <p>17 Q. And you charged -- with respect to your 18 expert opinions in the opioid litigation, you 19 charged for your time preparing reports and 20 testifying; correct?</p> <p>21 A. Yes.</p> <p>22 Q. You made over a million dollars as an 23 expert in the opioid litigation; right?</p> <p>24 MS. McNABB: Objection. Speculation.</p> <p>25 THE WITNESS: I'm not sure how much it was.</p>
<p style="text-align: right;">Page 59</p> <p>1 date for your work in this litigation?</p> <p>2 A. Oh, we can add it up.</p> <p>3 Q. Do you know how much that is?</p> <p>4 A. I haven't added it up.</p> <p>5 Q. I added it up. I got about \$177,000.</p> <p>6 A. M-hm.</p> <p>7 Q. Does that sound right?</p> <p>8 A. That sounds about right.</p> <p>9 Q. Are you getting paid for your time here 10 today?</p> <p>11 A. Yes, I am.</p> <p>12 Q. Dr. Lembke, did you testify in a string of 13 cases against companies involved with the 14 manufacturing, distribution, and dispensing of 15 opioid medications?</p> <p>16 A. Yes.</p> <p>17 Q. Did you testify on behalf of plaintiffs in 18 that litigation?</p> <p>19 A. Yes.</p> <p>20 Q. And you were retained in that litigation 21 shortly after you released a book about how you 22 believe doctors were duped into prescribing opioid 23 medications to patients; is that right?</p> <p>24 MS. McNABB: Objection. Speculation.</p> <p>25 THE WITNESS: The publication of my book</p>	<p style="text-align: right;">Page 61</p> <p>1 BY MR. ERCOLE:</p> <p>2 Q. You don't know how much money you made in 3 the opioid litigation as an expert?</p> <p>4 A. I never sat down and added it up, no. It 5 was over many years.</p> <p>6 Q. How many years?</p> <p>7 A. I believe my involvement started in 2019 8 and is ongoing to this day.</p> <p>9 Q. There was a federal MDL case in the opioid 10 litigation; right?</p> <p>11 A. Yes.</p> <p>12 Q. And that was in Ohio?</p> <p>13 A. There were various bellwether trials. Ohio 14 was the first bellwether.</p> <p>15 Q. And do you recall testifying in that case 16 that you were paid a couple hundred thousand dollars 17 to prepare a report and testify as a witness in the 18 MDL litigation?</p> <p>19 A. I wasn't paid to prepare the report. I was 20 paid for my time and my expertise, and I did prepare 21 a report. And I don't remember testifying to that.</p> <p>22 I remember being asked similar questions to 23 what you're asking me now in terms of how much money 24 I made. And I remember answering those questions. 25 But I don't remember the specific amounts.</p>

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<p style="text-align: right;">Page 62</p> <p>1 Q. Could it have been over \$2 million?</p> <p>2 A. Doubtful.</p> <p>3 Q. Might have been, though; right?</p> <p>4 A. I don't think so.</p> <p>5 Q. How many -- how many reports -- strike</p> <p>6 that.</p> <p>7 In how many cases in the opioid litigation</p> <p>8 did you prepare reports?</p> <p>9 MS. McNABB: Objection. Scope.</p> <p>10 I'm going to have -- I'm going object to</p> <p>11 the line of questioning on -- on litigations outside</p> <p>12 of opioid -- or outside of the social media</p> <p>13 litigation to the extent it's outside of the scope</p> <p>14 of this litigation.</p> <p>15 MR. ERCOLE: Okay.</p> <p>16 BY MR. ERCOLE:</p> <p>17 Q. You can answer the question.</p> <p>18 A. Can you say it again?</p> <p>19 Q. Sure.</p> <p>20 How many cases in the opioid litigation did</p> <p>21 you prepare reports for?</p> <p>22 A. I prepared reports for federal MDL</p> <p>23 litigation and then some state litigation that was</p> <p>24 related but separate. And I have my prior testimony</p> <p>25 listed here on this page. Happy to read through it.</p>	<p style="text-align: right;">Page 64</p> <p>1 those are -- they may be related, but each of those</p> <p>2 were separate cases; right?</p> <p>3 MS. McNABB: Objection. Speculation.</p> <p>4 THE WITNESS: You're a lawyer. I'm a</p> <p>5 physician. You know, I don't -- I'm not as familiar</p> <p>6 with your language.</p> <p>7 To me, it was one big case with a variety</p> <p>8 of different bellwether trials that happened over a</p> <p>9 sequence of time.</p> <p>10 BY MR. ERCOLE:</p> <p>11 Q. Right.</p> <p>12 And so given that there were different</p> <p>13 trials in different cases, my question is, how many</p> <p>14 expert reports on the plaintiffs' side did you</p> <p>15 prepare and submit in the various cases that</p> <p>16 comprised the opioid litigation?</p> <p>17 MS. McNABB: Objection. Asked and</p> <p>18 answered.</p> <p>19 THE WITNESS: I did -- I do feel like I</p> <p>20 answered this question. I can try to answer it</p> <p>21 again.</p> <p>22 BY MR. ERCOLE:</p> <p>23 Q. I mean, with all due respect, I don't think</p> <p>24 you -- you've answered.</p> <p>25 Do you know the number of expert reports</p>
<p style="text-align: right;">Page 63</p> <p>1 Q. But your prior testimony doesn't identify</p> <p>2 the cases where you prepared expert reports; right?</p> <p>3 A. Essentially I prepared one very large</p> <p>4 report for this case and then made modifications to</p> <p>5 the report, depending upon what the bellwether case</p> <p>6 was, where it was, and changes over time in terms of</p> <p>7 who the defendants were, because that did change</p> <p>8 over time.</p> <p>9 Q. Okay. So, at least sitting here today, are</p> <p>10 you aware of the number of cases where you submitted</p> <p>11 a report in the opioid litigation?</p> <p>12 A. I'm not sure what you mean by the "number</p> <p>13 of cases." To me, they were all related.</p> <p>14 Q. Okay. But you understand that there was an</p> <p>15 Ohio case.</p> <p>16 Then you also testified in New York; is</p> <p>17 that correct?</p> <p>18 A. Yes.</p> <p>19 Q. And you provided testimony in</p> <p>20 San Francisco?</p> <p>21 A. Yes.</p> <p>22 Q. And there was other litigation throughout</p> <p>23 the United States over opioid litigation; right?</p> <p>24 A. Yes.</p> <p>25 Q. Okay. And you understand that each of</p>	<p style="text-align: right;">Page 65</p> <p>1 that you prepared and submitted in connection with</p> <p>2 the opioid litigation?</p> <p>3 A. If you were to look at my expert report for</p> <p>4 these various trials, you would see that they are</p> <p>5 very similar. So in my mind, I essentially created</p> <p>6 one expert report that contained my opinions. And</p> <p>7 then there were iterations or slight changes made to</p> <p>8 that report with no change in my opinions depending</p> <p>9 upon the bellwether trial.</p> <p>10 Q. And -- fair enough.</p> <p>11 But each time that a report got submitted</p> <p>12 in a case, you had to sign it; right?</p> <p>13 A. Yes.</p> <p>14 Q. Do you know how many signed expert reports</p> <p>15 you submitted on behalf of the plaintiffs in the</p> <p>16 opioid litigation?</p> <p>17 A. I don't remember.</p> <p>18 Q. In about -- for the opioid litigation,</p> <p>19 your -- you charged \$500 an hour for reports; is</p> <p>20 that right?</p> <p>21 MS. McNABB: Objection. Scope.</p> <p>22 THE WITNESS: I charged \$500 an hour for</p> <p>23 record review and report preparation.</p> <p>24 BY MR. ERCOLE:</p> <p>25 Q. And you charged \$800 an hour for testifying</p>

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<p style="text-align: right;">Page 66</p> <p>1 in opioids; right?</p> <p>2 MS. McNABB: Objection. Scope.</p> <p>3 THE WITNESS: Yes.</p> <p>4 BY MR. ERCOLE:</p> <p>5 Q. Okay. And your rates as an expert have now</p> <p>6 increased; right?</p> <p>7 A. Yes.</p> <p>8 Q. Four years ago, in 2021, you published a</p> <p>9 book entitled Dopamine Nation; is that right?</p> <p>10 A. That's right.</p> <p>11 Q. When did you start writing Dopamine Nation?</p> <p>12 A. And in a way Dopamine Nation, I was working</p> <p>13 on it starting in the early 2000s on and off. It</p> <p>14 took me a long time to put those ideas together.</p> <p>15 Q. Did any of the lawyers in the social media</p> <p>16 litigation, the current case that we have, provide</p> <p>17 any feedback or suggestions in connection with the</p> <p>18 writing of that book?</p> <p>19 MS. McNABB: Objection. Scope.</p> <p>20 THE WITNESS: That book was written and</p> <p>21 published before I had any communication with any</p> <p>22 lawyers about social media litigation.</p> <p>23 BY MR. ERCOLE:</p> <p>24 Q. And in Dopamine Nation, you wrote that the</p> <p>25 smartphone is the modern-day hypodermic needle; is</p>	<p style="text-align: right;">Page 68</p> <p>1 used as a tool, it can be for good. And when it's</p> <p>2 used as a drug, it can be for harm.</p> <p>3 Q. You've made some money off of</p> <p>4 Dopamine Nation; right?</p> <p>5 A. Yes.</p> <p>6 Q. How much money have you made off of that</p> <p>7 book?</p> <p>8 A. I don't know.</p> <p>9 MS. McNABB: Objection. Scope.</p> <p>10 BY MR. ERCOLE:</p> <p>11 Q. Are you a full-time member of the Stanford</p> <p>12 University School of Medicine faculty?</p> <p>13 A. Yes.</p> <p>14 Q. What percentage of your income this year</p> <p>15 will be from expert witness work?</p> <p>16 A. About 15 percent.</p> <p>17 Q. What -- will you make this year more money</p> <p>18 as an expert or in connection with -- do you --</p> <p>19 strike that.</p> <p>20 Do you get a salary as a -- as a full-time</p> <p>21 faculty member at Stanford University?</p> <p>22 A. Yes, I do.</p> <p>23 Q. And what is your salary?</p> <p>24 A. It depends how you look at it. I have a</p> <p>25 base salary. I have bonuses.</p>
<p style="text-align: right;">Page 67</p> <p>1 that right?</p> <p>2 MS. McNABB: Objection. Speculation.</p> <p>3 BY MR. ERCOLE:</p> <p>4 Q. It's your words. I mean, do you remember</p> <p>5 writing that or not?</p> <p>6 A. Actually, you didn't -- you didn't get the</p> <p>7 quote quite right.</p> <p>8 Q. Well --</p> <p>9 A. It's close, but it's not quite --</p> <p>10 Q. Okay. Give me the right quote, then.</p> <p>11 A. The modern-day hypodermic syringe.</p> <p>12 Q. Oh, okay. Thank you.</p> <p>13 A. You're welcome.</p> <p>14 Q. And the modern-day hypodermic syringe was a</p> <p>15 metaphor for sort of illegal drugs or heroin that's</p> <p>16 often administered through a hypodermic syringe;</p> <p>17 right?</p> <p>18 A. Yes.</p> <p>19 Q. And in your view, is a cell phone the same</p> <p>20 as a needle full of heroin?</p> <p>21 A. That was the metaphor, m-hm.</p> <p>22 Q. Is that your -- is that your view?</p> <p>23 A. I believe a smartphone can be used in that</p> <p>24 way. As I've said many times, you know, it's a --</p> <p>25 both a powerful tool and a potent drug. When it's</p>	<p style="text-align: right;">Page 69</p> <p>1 Q. How much?</p> <p>2 A. My base salary is approximately 300,000.</p> <p>3 Q. And you said you also have bonuses; is that</p> <p>4 right?</p> <p>5 A. (Nonverbal response.)</p> <p>6 Q. And how much are those?</p> <p>7 A. It depends. And I don't know.</p> <p>8 Q. More than \$50,000 in bonuses?</p> <p>9 A. I don't know. It's -- I don't know the</p> <p>10 answer.</p> <p>11 Q. What are the bonuses -- how are they</p> <p>12 derived?</p> <p>13 A. Based on performance metrics.</p> <p>14 Q. Is it fair to say that sort of as an annual</p> <p>15 salary as a full-time faculty member at Stanford</p> <p>16 University School of Medicine, you're making about</p> <p>17 \$400,000 or less?</p> <p>18 MS. McNABB: Objection. Speculation.</p> <p>19 THE WITNESS: No.</p> <p>20 BY MR. ERCOLE:</p> <p>21 Q. More than that?</p> <p>22 A. No. Less than that.</p> <p>23 Q. Okay. \$350,000 or --</p> <p>24 A. I'm making approximately \$300,000.</p> <p>25 Q. Okay.</p>

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<p style="text-align: right;">Page 70</p> <p>1 A. Yeah.</p> <p>2 Q. Do you expect to be paid more than \$300,000</p> <p>3 as an expert witness this year?</p> <p>4 MS. McNABB: Objection. Speculation.</p> <p>5 THE WITNESS: I don't know. I doubt it.</p> <p>6 BY MR. ERCOLE:</p> <p>7 Q. Are you being paid -- are you continuing to</p> <p>8 serve as an expert for the opioid litigation?</p> <p>9 A. Yes.</p> <p>10 Q. How much have you made as an expert in the</p> <p>11 opioid litigation this year?</p> <p>12 MS. McNABB: Objection. Scope.</p> <p>13 THE WITNESS: Very little.</p> <p>14 BY MR. ERCOLE:</p> <p>15 Q. How much is "very little"?</p> <p>16 A. I don't know exactly. If I had to guess,</p> <p>17 \$500. I don't -- I don't remember.</p> <p>18 Q. In 2024 was -- did the amount of -- how did</p> <p>19 the amount of money you got as an expert witness</p> <p>20 compare to what you were paid as a salary at</p> <p>21 Stanford?</p> <p>22 MS. McNABB: Objection. Speculation.</p> <p>23 THE WITNESS: What do you mean, how did it</p> <p>24 compare?</p> <p>25 ///</p>	<p style="text-align: right;">Page 72</p> <p>1 BY MR. ERCOLE:</p> <p>2 Q. But that wasn't the only case you were</p> <p>3 serving as an expert in; right?</p> <p>4 A. I was still serving in opioid litigation.</p> <p>5 But all of that litigation has slowed way down.</p> <p>6 Q. How much -- I apologize. I didn't mean to</p> <p>7 interrupt you.</p> <p>8 If I do interrupt you, just let me know</p> <p>9 because that is not -- that is not my intent.</p> <p>10 A. Yeah.</p> <p>11 Q. So I apologize for that.</p> <p>12 A. I don't remember what I made in 2023 in</p> <p>13 opioid litigation. I really don't.</p> <p>14 Q. How about 2022? Do you remember?</p> <p>15 A. No.</p> <p>16 Q. Dr. Lembke, when do you think social media</p> <p>17 addiction, sort of as you've defined it, first arose</p> <p>18 in the population?</p> <p>19 A. I think it arose in approximately the</p> <p>20 five-year period between 2010 and 2015. I mean, it</p> <p>21 was probably already present. But in terms of</p> <p>22 coming to greater awareness and clinical awareness,</p> <p>23 I would peg it starting around 2010 to 2015.</p> <p>24 Q. When did you see the earliest signal of</p> <p>25 social media addiction?</p>
<p style="text-align: right;">Page 71</p> <p>1 BY MR. ERCOLE:</p> <p>2 Q. Yeah.</p> <p>3 Did you make more, less? What's the --</p> <p>4 A. I made less.</p> <p>5 Q. Okay. How much less?</p> <p>6 MS. McNABB: Same objection.</p> <p>7 THE WITNESS: I don't remember exactly.</p> <p>8 Maybe a third. I made a third of what I make in my</p> <p>9 salary.</p> <p>10 And you -- you have the invoices. You can</p> <p>11 add it up.</p> <p>12 BY MR. ERCOLE:</p> <p>13 Q. You were also serving as an expert witness</p> <p>14 in the opioid litigation in 2024?</p> <p>15 A. Yes.</p> <p>16 MS. McNABB: Objection. Scope.</p> <p>17 BY MR. ERCOLE:</p> <p>18 Q. How about 2023? How did the amount you got</p> <p>19 as an expert, both opioids and this litigation,</p> <p>20 compare to what you were earning as a salary at</p> <p>21 Stanford?</p> <p>22 MS. McNABB: Objection. Scope and</p> <p>23 speculation.</p> <p>24 THE WITNESS: Well, in 2023 you have it</p> <p>25 here that I made \$5,200 in social media litigation.</p>	<p style="text-align: right;">Page 73</p> <p>1 A. Probably around 2010.</p> <p>2 MR. ERCOLE: Mark this as Exhibit 5.</p> <p>3 (Marked for identification purposes,</p> <p>4 Lembke Exhibit 5.)</p> <p>5 BY MR. ERCOLE:</p> <p>6 Q. Dr. Lembke, are you -- are you familiar</p> <p>7 with this document?</p> <p>8 A. Yes.</p> <p>9 Q. And this is an interview you gave to the</p> <p>10 New York Times just a few months ago; right?</p> <p>11 A. That is correct.</p> <p>12 Q. So I want to refer you to -- it looks like</p> <p>13 it's the third page where it has -- starts with you</p> <p>14 published Dopamine Nation in 2021.</p> <p>15 Do you see that?</p> <p>16 A. M-hm.</p> <p>17 Q. And then a question is posed. And then you</p> <p>18 answer that question. And if you look down at the</p> <p>19 bottom of the page --</p> <p>20 A. M-hm.</p> <p>21 Q. -- it says -- the answer you gave was</p> <p>22 (as read):</p> <p>23 "Then roughly 2015, 2016 we started</p> <p>24 to see the earliest signal of social</p> <p>25 media addiction, online shopping, a huge</p>

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<p style="text-align: right;">Page 74</p> <p>1 increase in online gambling addiction."</p> <p>2 Is that correct?</p> <p>3 A. Yeah.</p> <p>4 Q. At least, according to the Times interview,</p> <p>5 then, you identified 2015 and 2016 as the time when</p> <p>6 you started to see the earliest signal of social</p> <p>7 media addiction; right?</p> <p>8 A. So I was speaking about when social media</p> <p>9 addiction presented in clinical care. And there's</p> <p>10 naturally a delay between the onset of a disease in</p> <p>11 a population with exposure to a toxin and when</p> <p>12 people actually go and seek help.</p> <p>13 So my opinion is that social media</p> <p>14 addiction began to arise around 2010, but we didn't</p> <p>15 start seeing people coming into clinic until a</p> <p>16 little bit later.</p> <p>17 Q. Do you know when the first social media</p> <p>18 platform was created?</p> <p>19 A. It probably depends on how you're defining</p> <p>20 "social media," but I don't.</p> <p>21 Q. How about the first defendants' platform?</p> <p>22 Do you know when that --</p> <p>23 A. I don't, no.</p> <p>24 Q. Do you have any social media accounts of</p> <p>25 your own?</p>	<p style="text-align: right;">Page 76</p> <p>1 question.</p> <p>2 Have you ever used any of the defendants'</p> <p>3 platforms in this case?</p> <p>4 A. Yes. I have personally used YouTube.</p> <p>5 Q. Any other platforms?</p> <p>6 A. I have looked over the shoulders and had</p> <p>7 patients show me their usage on defendants'</p> <p>8 platforms. I've seen my kids usage when they show</p> <p>9 me on defendants' platforms. But I have not</p> <p>10 personally used the platforms of other defendants.</p> <p>11 Q. So other than YouTube, you haven't used any</p> <p>12 of the other defendants' platforms; correct?</p> <p>13 A. That's correct. If you're defining "use"</p> <p>14 as I personally got on there and was posting,</p> <p>15 commenting, liking, I have not done that.</p> <p>16 Q. Do you still use YouTube?</p> <p>17 A. Yes.</p> <p>18 Q. What do you use YouTube for?</p> <p>19 A. Basically entertainment, some news.</p> <p>20 Q. Anything else?</p> <p>21 A. Generally not.</p> <p>22 Q. Have you ever used YouTube Shorts?</p> <p>23 A. No.</p> <p>24 Q. Do you know what YouTube Shorts is?</p> <p>25 A. Yes. I've seen -- I've seen YouTube</p>
<p style="text-align: right;">Page 75</p> <p>1 A. I have e-mail.</p> <p>2 Q. What type of e-mail platform do you use?</p> <p>3 A. Stanford.edu.</p> <p>4 Q. Do you think e-mail is addictive?</p> <p>5 A. Not generally.</p> <p>6 Q. Can be, though?</p> <p>7 A. I think that it's possible to engage in</p> <p>8 compulsive fixation on e-mail or zero inbox, but</p> <p>9 it's generally not meeting threshold criteria for</p> <p>10 the kinds of harm that we're talking about when</p> <p>11 we're talking about addiction.</p> <p>12 Q. How about Outlook? Do you have Outlook?</p> <p>13 A. Yes.</p> <p>14 Q. Would you consider that a form of social</p> <p>15 media?</p> <p>16 A. No.</p> <p>17 Q. Do you have any accounts with respect to</p> <p>18 the defendants' platforms in this case?</p> <p>19 A. No.</p> <p>20 Q. Have you ever been on any of the</p> <p>21 defendants' platforms?</p> <p>22 A. Yes.</p> <p>23 Q. Which platforms have you been on?</p> <p>24 A. When you say "been on the platform" ...</p> <p>25 Q. Yeah. Strike that. That's a good</p>	<p style="text-align: right;">Page 77</p> <p>1 Shorts, but I don't -- I try not to consume YouTube</p> <p>2 Shorts because they're so addictive. And I know</p> <p>3 that once I would start watching them, it would be</p> <p>4 difficult to stop.</p> <p>5 Q. So in your view, if you, Dr. Lembke, start</p> <p>6 watching YouTube Shorts, you will quickly become</p> <p>7 addicted to YouTube Shorts; is that your testimony?</p> <p>8 A. Not in a deterministic way. But I think</p> <p>9 the platform is addictive, and I find that I</p> <p>10 personally -- when I start to watch YouTube Shorts,</p> <p>11 it's difficult for me to maintain a sense of how</p> <p>12 much time I've spent there. And it's generally not</p> <p>13 good for my well-being.</p> <p>14 Q. How many times have you watched YouTube</p> <p>15 Shorts?</p> <p>16 A. A handful of times. Especially when it's</p> <p>17 interspersed with -- they intersperse it now with</p> <p>18 the regular YouTube. So, you know, they're trying</p> <p>19 to get you to click on it, or at least that's what</p> <p>20 it feels like.</p> <p>21 Q. You've never used YouTube Shorts, though;</p> <p>22 right?</p> <p>23 A. What do you mean by "used"?</p> <p>24 Q. I think it's pretty self -- self-evident.</p> <p>25 How would you define "used," Dr. Lembke?</p>

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<p style="text-align: right;">Page 78</p> <p>1 A. Okay. Well, as you know, YouTube is a 2 platform that you don't need to have an account in 3 order to view YouTube. So without an account, I 4 have gone onto the YouTube platform and I have 5 watched videos. 6 Q. And have you watched videos on YouTube 7 Shorts before? 8 A. Yes. 9 Q. What videos did you watch on YouTube 10 Shorts? 11 A. I don't remember. The content was not 12 memorable. 13 Q. You've spoken publicly about your addiction 14 to romance novels; is that right? 15 A. Yes. 16 Q. And I think you also linked an increase in 17 your reading of romance novels to when you got a 18 Kindle; is that right? 19 A. Yes. 20 Q. And you classified your addiction to a 21 particular genre of literature, not to the Kindle; 22 right? 23 A. I specifically talk about how it was the 24 Kindle that allowed me the kind of access that 25 created the addiction.</p>	<p style="text-align: right;">Page 80</p> <p>1 right? 2 MS. McNABB: Objection. Scope. 3 THE WITNESS: Can you read me a quote? I'm 4 not -- I think it would help to know what you're 5 specifically referring to. 6 BY MR. ERCOLE: 7 Q. Sure. 8 On page 16 of your -- your book -- sorry, 9 page 15 of your book Dopamine Nation, you write 10 (as read): 11 "I wanted to indulge in that moment 12 of mounting sexual tension that finally 13 gets resolved when the hero and heroine 14 hook up." 15 Right? 16 A. Okay. Yes. 17 Q. Right. 18 And so is that -- like, my understanding 19 from your book, and tell me if this is wrong, is 20 that you felt like you were getting addicted to this 21 erotic genre of romance novels; right? 22 A. Yes. 23 MS. McNABB: Objection. Scope. 24 THE WITNESS: Yes. 25 ///</p>
<p style="text-align: right;">Page 79</p> <p>1 Q. So you were addicted to the Kindle or to 2 the genre of literature or both? 3 MS. McNABB: Objection. Speculation. 4 THE WITNESS: The Kindle is essentially a 5 technological device that allowed me easy access to 6 the genre, thereby increasing my vulnerability to 7 compulsive overconsumption of that genre. 8 BY MR. ERCOLE: 9 Q. You wanted to read content about that 10 genre; right? 11 A. Well, I wanted to read romance novels -- 12 Q. Right. 13 A. -- yes. 14 Q. And were there particular sections of 15 romance novels that you felt like you were addicted 16 to? 17 MS. McNABB: Objection. Speculation. 18 THE WITNESS: It was the whole frame and 19 design of those novels that I was addicted to. 20 The content was fairly irrelevant as long 21 as it followed a specific pattern that I had -- that 22 had become habituated for me and was reinforcing. 23 BY MR. ERCOLE: 24 Q. You write in your book about your addiction 25 to scenes in those novels regarding sexual tension;</p>	<p style="text-align: right;">Page 81</p> <p>1 BY MR. ERCOLE: 2 Q. And you were reading them for this sort of 3 moment of -- of sexual tension and when that gets 4 resolved between the hero and heroine; is that 5 correct? 6 MS. McNABB: Objection. Scope. 7 THE WITNESS: The whole thing was -- it 8 wasn't just that one moment. It's all the buildup 9 to that moment. 10 BY MR. ERCOLE: 11 Q. And you enjoyed reading those novels; 12 right? 13 MS. McNABB: Objection. Scope. 14 THE WITNESS: Initially I enjoyed them. 15 And then even when I wasn't enjoying them later on, 16 I still felt a compulsion to read them. 17 BY MR. ERCOLE: 18 Q. And you believed that those romance novels 19 were designed to hook you; right? 20 MS. McNABB: Objection. Scope. 21 THE WITNESS: I believe that they're 22 written according to a certain standardized formula 23 that's meant to be highly reinforcing. And it was 24 certainly for me. 25 ///</p>

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<p style="text-align: right;">Page 82</p> <p>1 BY MR. ERCOLE:</p> <p>2 Q. Right.</p> <p>3 And, in fact, on page -- I mean, you wrote</p> <p>4 on page 15 of your book (as read):</p> <p>5 "I just wanted my fix, and these</p> <p>6 books written according to a formula were</p> <p>7 designed to hook me."</p> <p>8 Right?</p> <p>9 MS. McNABB: Objection. Scope.</p> <p>10 THE WITNESS: Yes, I agree with what I</p> <p>11 wrote there.</p> <p>12 BY MR. ERCOLE:</p> <p>13 Q. Aren't all books designed to hook the</p> <p>14 reader?</p> <p>15 MS. McNABB: Objection. Scope.</p> <p>16 THE WITNESS: Not necessarily, no.</p> <p>17 BY MR. ERCOLE:</p> <p>18 Q. What books are not designed to keep their</p> <p>19 readers engaged?</p> <p>20 MS. McNABB: Objection. Scope.</p> <p>21 THE WITNESS: Textbooks, dictionaries,</p> <p>22 various how-to manuals. I mean, there are a</p> <p>23 gazillion different types of books that are not</p> <p>24 written for compulsive page turning.</p> <p>25 ///</p>	<p style="text-align: right;">Page 84</p> <p>1 But you've written and you've given lots of</p> <p>2 interviews about how you were addicted to this genre</p> <p>3 of erotic romance novels; right?</p> <p>4 MS. McNABB: Objection. Scope.</p> <p>5 THE WITNESS: I do believe that I developed</p> <p>6 a mild addiction to erotica. But I always qualify</p> <p>7 that by saying my mild addiction is not the same as</p> <p>8 a severe addiction. Addiction is a spectrum</p> <p>9 disorder.</p> <p>10 I wouldn't want to trivialize somebody's</p> <p>11 more severe addiction by comparing it to my</p> <p>12 addiction. Every person is different in terms of</p> <p>13 the degree of psychopathology.</p> <p>14 BY MR. ERCOLE:</p> <p>15 Q. And you would agree that other books</p> <p>16 written with the formula that we've been talking</p> <p>17 about also can be addictive to readers; right?</p> <p>18 MS. McNABB: Objection. Scope.</p> <p>19 THE WITNESS: It depends on that person's</p> <p>20 vulnerability to that particular medium. Not</p> <p>21 everybody is a reader. Not everybody is going to be</p> <p>22 reinforced by a certain type of storytelling.</p> <p>23 But, yes, I believe that I'm not the only</p> <p>24 one out there who's developed a mild addiction or</p> <p>25 even a more severe addiction to books, to certain</p>
<p style="text-align: right;">Page 83</p> <p>1 BY MR. ERCOLE:</p> <p>2 Q. What books are written for compulsive page</p> <p>3 turning?</p> <p>4 MS. McNABB: Objection. Scope.</p> <p>5 THE WITNESS: Generally the kinds of books</p> <p>6 that are based on a sort of formulaic plot</p> <p>7 structure, fast-paced, chapters that end on a cliff</p> <p>8 hanger so that you feel compelled to continue</p> <p>9 reading to find out what happens.</p> <p>10 It's the same narrative formula that's used</p> <p>11 for highly reinforcing TV shows or serials, these</p> <p>12 types of things.</p> <p>13 BY MR. ERCOLE:</p> <p>14 Q. And in your view, those types of books are</p> <p>15 designed to be addictive; right?</p> <p>16 MS. McNABB: Objection. Scope.</p> <p>17 THE WITNESS: They're designed to pull the</p> <p>18 reader in and to make it difficult for the reader to</p> <p>19 put them down. I -- I wouldn't use -- when I use</p> <p>20 the word "addictive," I'm really referring to a form</p> <p>21 of psychopathology. Addiction is itself a brain</p> <p>22 disease with documentable harms related to it.</p> <p>23 So I don't usually use that word casually.</p> <p>24 BY MR. ERCOLE:</p> <p>25 Q. Right.</p>	<p style="text-align: right;">Page 85</p> <p>1 genres of books.</p> <p>2 BY MR. ERCOLE:</p> <p>3 Q. So let me -- sticking with that -- with</p> <p>4 that theme, let me ask you some questions about in</p> <p>5 your view what people can become addicted to.</p> <p>6 Can people become addicted to phones?</p> <p>7 A. The actual device itself?</p> <p>8 Q. Use -- phone use.</p> <p>9 A. Use of a smartphone?</p> <p>10 Q. Sure.</p> <p>11 A. Yes.</p> <p>12 Q. Can people become addicted to the Internet?</p> <p>13 A. Both the phone and the Internet are a</p> <p>14 portal to various forms of digital media that people</p> <p>15 can get addicted to.</p> <p>16 Q. Can people become addicted to Netflix?</p> <p>17 MS. McNABB: Objection. Speculation.</p> <p>18 THE WITNESS: I think it's possible for</p> <p>19 people to watch too much Netflix such that it can</p> <p>20 cause harm in their lives.</p> <p>21 BY MR. ERCOLE:</p> <p>22 Q. Can people become addicted to Victorian</p> <p>23 fiction novels?</p> <p>24 MS. McNABB: Objection. Speculation.</p> <p>25 THE WITNESS: What's a Victorian fiction</p>

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<p style="text-align: right;">Page 86</p> <p>1 novel?</p> <p>2 BY MR. ERCOLE:</p> <p>3 Q. Do you know any Victorian fiction novel?</p> <p>4 A. Do you know any Victorian --</p> <p>5 Q. How about Pride and Prejudice, books like</p> <p>6 that?</p> <p>7 A. Uh-huh. Those older novels were written in</p> <p>8 a very different way that I think is -- has more</p> <p>9 friction, requires more -- heavier cognitive lift to</p> <p>10 engage with them.</p> <p>11 It's possible, but it's less likely than</p> <p>12 the modern novels that we have now.</p> <p>13 Q. Can people become addicted to listening to</p> <p>14 rap music?</p> <p>15 MS. McNABB: Objection. Speculation.</p> <p>16 THE WITNESS: It's possible, I suppose, if</p> <p>17 rap music is very reinforcing to them and they</p> <p>18 continue to consume in an out-of-control, compulsive</p> <p>19 way that leads to consequences.</p> <p>20 BY MR. ERCOLE:</p> <p>21 Q. Can people become addicted to praying?</p> <p>22 MS. McNABB: Objection. Speculation.</p> <p>23 THE WITNESS: I don't think so.</p> <p>24 BY MR. ERCOLE:</p> <p>25 Q. You don't think people can become addicted</p>	<p style="text-align: right;">Page 88</p> <p>1 Is it possible for someone to become</p> <p>2 addicted to outtakes of American Idol?</p> <p>3 MS. McNABB: Objection. Speculation.</p> <p>4 THE WITNESS: It's possible.</p> <p>5 BY MR. ERCOLE:</p> <p>6 Q. Is it possible for someone to become</p> <p>7 addicted to Three Stooges episodes?</p> <p>8 MS. McNABB: Objection. Speculation.</p> <p>9 THE WITNESS: Unlikely. There aren't</p> <p>10 enough of them.</p> <p>11 BY MR. ERCOLE:</p> <p>12 Q. Could someone become addicted to something</p> <p>13 called Mr. Pimple Popper?</p> <p>14 MS. McNABB: Objection. Speculation.</p> <p>15 THE WITNESS: Any kind of video for which</p> <p>16 there's a medium by which they can be delivered with</p> <p>17 these design features that make them addictive, so</p> <p>18 easy, frictionless access in almost infinite</p> <p>19 quantity, the kind of interactive elements that</p> <p>20 increase the potency, an algorithm that tailors the</p> <p>21 delivery of those videos for the individual and what</p> <p>22 they have watched before, some degree of, you know,</p> <p>23 uncertainty, all of that creates a highly addictive</p> <p>24 medium.</p> <p>25 You are listing a lot of different forms of</p>
<p style="text-align: right;">Page 87</p> <p>1 to praying?</p> <p>2 A. I don't think so.</p> <p>3 Q. Even if it's -- if people derive pleasure</p> <p>4 from it and it's reinforcing and they spend lots of</p> <p>5 time praying, taking away from other aspects of your</p> <p>6 life, wouldn't that be something that you would</p> <p>7 consider to be addictive?</p> <p>8 MS. McNABB: Objection --</p> <p>9 (Simultaneous speakers - unclear.)</p> <p>10 THE WITNESS: Those are not the criteria</p> <p>11 for diagnosing addiction.</p> <p>12 BY MR. ERCOLE:</p> <p>13 Q. Can people become addicted to outtakes of</p> <p>14 American Idol?</p> <p>15 MS. McNABB: Objection. Speculation.</p> <p>16 (Stenographer interrupted for clarification</p> <p>17 of the record.)</p> <p>18 THE WITNESS: Again, it would matter on the</p> <p>19 individual. It would matter on whether or not they</p> <p>20 were meeting criteria, the four Cs, tolerance,</p> <p>21 withdrawal. That's what I would look at for every</p> <p>22 individual in every individual situation.</p> <p>23 BY MR. ERCOLE:</p> <p>24 Q. Right. And I'm just asking right now if</p> <p>25 it's possible.</p>	<p style="text-align: right;">Page 89</p> <p>1 content. And the content really doesn't matter as</p> <p>2 much as the design features and the recursive</p> <p>3 feedback loop that's created that gets people into</p> <p>4 these rabbit holes where they're watching many</p> <p>5 different types of videos on a platform that</p> <p>6 promotes that kind of addictive feed.</p> <p>7 BY MR. ERCOLE:</p> <p>8 Q. Do you remember my question, Dr. Lembke?</p> <p>9 A. I feel like I answered your question.</p> <p>10 Q. Do you remember what it was?</p> <p>11 MS. McNABB: Objection.</p> <p>12 BY MR. ERCOLE:</p> <p>13 Q. Do you remember my question?</p> <p>14 MS. McNABB: Objection. Badgering.</p> <p>15 THE WITNESS: Do you want to repeat the</p> <p>16 question?</p> <p>17 BY MR. ERCOLE:</p> <p>18 Q. Sure.</p> <p>19 Could someone become addicted to something</p> <p>20 called Mr. Pimple Popper?</p> <p>21 A. I feel like I --</p> <p>22 MS. McNABB: Objection. Speculation.</p> <p>23 THE WITNESS: -- I answered. I answered</p> <p>24 that question, that the content is less important</p> <p>25 than the medium through which it is delivered.</p>

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<p style="text-align: right;">Page 90</p> <p>1 BY MR. ERCOLE:</p> <p>2 Q. Okay. But someone could -- is it -- I'm</p> <p>3 just asking, is it possible?</p> <p>4 Is it possible that someone could become</p> <p>5 addicted to watching Mr. Pimple Popper videos?</p> <p>6 MS. McNABB: Objection. Speculation.</p> <p>7 THE WITNESS: People can certainly get</p> <p>8 addicted to watching videos that are delivered on a</p> <p>9 platform that's designed to be addictive.</p> <p>10 BY MR. ERCOLE:</p> <p>11 Q. So --</p> <p>12 A. So people can get addicted to watching</p> <p>13 videos on YouTube.</p> <p>14 Q. Can they get addicted to particular types</p> <p>15 of videos?</p> <p>16 A. The content is not as important.</p> <p>17 Q. So in your -- your testimony is you can't</p> <p>18 get addicted to watching one particular type of</p> <p>19 video; is that right?</p> <p>20 MS. McNABB: Objection. Misstates and</p> <p>21 speculation.</p> <p>22 THE WITNESS: Yeah, that's not what I said.</p> <p>23 BY MR. ERCOLE:</p> <p>24 Q. Can you get addicted to watching one</p> <p>25 particular type of video on YouTube, for instance?</p>	<p style="text-align: right;">Page 92</p> <p>1 fairly simple.</p> <p>2 Can someone get addicted to watching a</p> <p>3 particular type of video on a platform?</p> <p>4 MS. McNABB: Objection. Speculation.</p> <p>5 THE WITNESS: I feel that I've answered</p> <p>6 that question.</p> <p>7 BY MR. ERCOLE:</p> <p>8 Q. So the answer is, no, they can't?</p> <p>9 A. It's not a "yes" or "no" answer.</p> <p>10 Q. Okay. Can someone get addicted to work?</p> <p>11 MS. McNABB: Objection. Speculation.</p> <p>12 THE WITNESS: We do occasionally see people</p> <p>13 who are, quote-unquote, workaholics, yes.</p> <p>14 BY MR. ERCOLE:</p> <p>15 Q. Can someone get addicted to playing</p> <p>16 basketball?</p> <p>17 MS. McNABB: Objection. Speculation.</p> <p>18 THE WITNESS: It would sort of depend.</p> <p>19 BY MR. ERCOLE:</p> <p>20 Q. They could, someone could; right?</p> <p>21 Possible?</p> <p>22 A. Unlikely.</p> <p>23 Q. Is it possible?</p> <p>24 A. Unlikely.</p> <p>25 Q. Unlikely doesn't rule something out, does</p>
<p style="text-align: right;">Page 91</p> <p>1 MS. McNABB: Objection. Speculation.</p> <p>2 THE WITNESS: Typically what happens when</p> <p>3 people get addicted to YouTube is they'll get drawn</p> <p>4 in by a certain type of video, but very quickly the</p> <p>5 medium will overtake the significance of the content</p> <p>6 itself. And they'll find themselves down a rabbit</p> <p>7 hole where they're watching a video that they never</p> <p>8 planned or intended to watch, because the content is</p> <p>9 less important than the recursive feedback loop and</p> <p>10 the design features that engage them on that</p> <p>11 platform.</p> <p>12 BY MR. ERCOLE:</p> <p>13 Q. So my question is a little bit different;</p> <p>14 right?</p> <p>15 And my question -- you're here giving</p> <p>16 testimony as a general causation expert; is that</p> <p>17 right?</p> <p>18 A. Yes.</p> <p>19 Q. And you haven't looked at any of the facts</p> <p>20 of any of the individual plaintiffs in this case;</p> <p>21 right?</p> <p>22 MS. McNABB: Objection.</p> <p>23 BY MR. ERCOLE:</p> <p>24 Q. So my question now -- I'm trying to</p> <p>25 understand your theory of addiction. My question is</p>	<p style="text-align: right;">Page 93</p> <p>1 it?</p> <p>2 A. I mean, I'd rather not speculate on, you</p> <p>3 know, a long list of scenarios. I can tell you that</p> <p>4 I have never seen a patient who's been addicted to</p> <p>5 basketball.</p> <p>6 Q. How about addicted to exercise?</p> <p>7 A. Yes, we do see that.</p> <p>8 Q. How about addicted to learning?</p> <p>9 MS. McNABB: Objection. Speculation.</p> <p>10 THE WITNESS: No.</p> <p>11 BY MR. ERCOLE:</p> <p>12 Q. You can't get addicted to learning?</p> <p>13 A. Learning is, by definition, a positive</p> <p>14 pursuit that humans would generally agree is good</p> <p>15 for us.</p> <p>16 So unless learning is taken and drugified</p> <p>17 in some way by, again, as I talk about in my report,</p> <p>18 being made more accessible and more potent or</p> <p>19 bountiful, more novel, more uncertain, if that</p> <p>20 happens, then it's really not learning anymore.</p> <p>21 It's something else happening through the</p> <p>22 application of technology.</p> <p>23 Q. And when you say "drugify," what are you</p> <p>24 referring to?</p> <p>25 A. As I talk about in my report, the design</p>

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<p style="text-align: right;">Page 94</p> <p>1 elements on the defendants' platforms include making 2 these digital media more accessible, especially more 3 accessible to kids, more bountiful, more of it. 4 Quantity and frequency do matter. 5 More potent because of the recursive 6 feedback loops with the posts, comments, shares, 7 likes, et cetera. 8 More uncertain in terms of intermittent 9 positive feedback. I talk about that in my report. 10 Q. Right. 11 I'm just trying to understand what you mean 12 by "drugify." 13 A. Yeah. 14 Q. What -- so you're using "drug" as a verb; 15 right? 16 A. M-hm. 17 Q. Okay. And what does that mean? Does that 18 mean take something and make it more like a drug? 19 A. Through the application of technology, in 20 the modern age, we have taken drugs that have been 21 around for centuries and drugified them by making 22 them more accessible, more potent, more bountiful in 23 terms of the overall supply, more novel. And 24 technology and digital devices and digital media 25 have done the same thing with even behaviors that we</p>	<p style="text-align: right;">Page 96</p> <p>1 and not sleep because they're on the platform, that 2 would not be a good thing. 3 Q. Can you become addicted to playing with 4 cats? 5 MS. McNABB: Objection. Speculation. 6 THE WITNESS: I don't think so. 7 BY MR. ERCOLE: 8 Q. Do you know one way or the other? 9 A. I've not seen that clinically and I -- that 10 doesn't make sense to me. 11 Q. Can you become addicted to water? 12 A. I did have a patient who got addicted to 13 water. She was an alcoholic in recovery who 14 realized that if she drank enough, she could become 15 hyponatremic and be altered. 16 Q. Can you become addicted to listening to 17 podcasts? 18 MS. McNABB: Objection. Speculation. 19 THE WITNESS: It would depend on the 20 person. It would depend on the medium. Really, in 21 each case, you would really have to look at whether 22 or not they were meeting addiction criteria. 23 BY MR. ERCOLE: 24 Q. It is possible, though, correct, in your 25 view?</p>
<p style="text-align: right;">Page 95</p> <p>1 typically think of as good for us, like learning or 2 human connection. 3 Q. Right. 4 So learning can then become addictive; is 5 that right? 6 A. Your question was, can learning be 7 addictive? 8 And I would say learning in the spirit of 9 the way that most people think about it is not 10 addictive because learning is healthy. 11 But if we create a, quote-unquote, learning 12 platform and we essentially turn it into a video 13 game, then you're not really dealing with learning 14 anymore. You're dealing with a medium that promotes 15 compulsive overuse. 16 Q. But if you're -- if you're using a platform 17 to learn about math or science, isn't that a good 18 thing? 19 MS. McNABB: Objection. Speculation. 20 THE WITNESS: It depends. 21 BY MR. ERCOLE: 22 Q. Can be a bad thing? 23 A. If the platform is not really geared toward 24 learning and instead geared toward optimizing watch 25 time, you know, getting kids to stay up all night</p>	<p style="text-align: right;">Page 97</p> <p>1 MS. McNABB: Objection. Speculation. 2 THE WITNESS: It's possible. 3 BY MR. ERCOLE: 4 Q. Would you agree that people overuse and 5 trivialize the term "addiction"? 6 A. I think that that can happen. 7 Q. You've said that in interviews; right? 8 A. Probably. 9 MR. ERCOLE: How about we stop here and 10 take a break, if that works? 11 I want to give -- I think we've probably 12 been going for an hour and a half at least. 13 THE VIDEOGRAPHER: The time is 10:32. 14 We're off the record. 15 (Recess taken from 10:32 to 10:46.) 16 THE COURT: The time is 10:46. We're back 17 on the record. 18 BY MR. ERCOLE: 19 Q. Dr. Lembke, a couple of follow-up questions 20 from some of the matters we talked about before the 21 break. 22 How much money have you made from 23 Dopamine Nation? 24 MS. McNABB: Objection. Scope. 25 THE WITNESS: I don't know.</p>

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<p style="text-align: right;">Page 98</p> <p>1 BY MR. ERCOLE:</p> <p>2 Q. More than a million dollars?</p> <p>3 A. I don't know.</p> <p>4 MS. McNABB: Objection.</p> <p>5 BY MR. ERCOLE:</p> <p>6 Q. More than \$2 million?</p> <p>7 (Stenographer interrupted for clarification</p> <p>8 of the record.)</p> <p>9 THE STENOGRAPHER: "More than a million</p> <p>10 dollars?"</p> <p>11 And you objected.</p> <p>12 MS. McNABB: Object to scope.</p> <p>13 THE STENOGRAPHER: And, I'm sorry, your</p> <p>14 answer was, Doctor?</p> <p>15 THE WITNESS: I don't know.</p> <p>16 THE STENOGRAPHER: Thank you.</p> <p>17 BY MR. ERCOLE:</p> <p>18 Q. More than \$2 million?</p> <p>19 MS. McNABB: Objection to scope.</p> <p>20 THE WITNESS: I don't know.</p> <p>21 BY MR. ERCOLE:</p> <p>22 Q. More than \$3 million?</p> <p>23 MS. McNABB: Same objection.</p> <p>24 THE WITNESS: I don't know.</p> <p>25 ///</p>	<p style="text-align: right;">Page 100</p> <p>1 THE WITNESS: Two of them do.</p> <p>2 BY MR. ERCOLE:</p> <p>3 Q. Which ones use them of the age group that</p> <p>4 you identified?</p> <p>5 MS. McNABB: Same objection.</p> <p>6 THE WITNESS: The 18 year old and the</p> <p>7 22 year old.</p> <p>8 BY MR. ERCOLE:</p> <p>9 Q. And do your children have smartphones?</p> <p>10 MS. McNABB: Same objection.</p> <p>11 THE WITNESS: Yes.</p> <p>12 BY MR. ERCOLE:</p> <p>13 Q. And with respect to the -- and the 22 year</p> <p>14 old -- sorry, the 20 year old and the 23 year old,</p> <p>15 they don't use social media at all; is that correct?</p> <p>16 MS. McNABB: Objection. Scope.</p> <p>17 THE WITNESS: I'm sorry. Could you say</p> <p>18 that again?</p> <p>19 BY MR. ERCOLE:</p> <p>20 Q. Sure.</p> <p>21 The 20 year old and the 23 year old, they</p> <p>22 don't use social media at all?</p> <p>23 A. Not to my knowledge.</p> <p>24 Q. With respect to your children who are 18</p> <p>25 and 22 respectively, what social media platforms do</p>
<p style="text-align: right;">Page 99</p> <p>1 BY MR. ERCOLE:</p> <p>2 Q. Dr. Lembke, could you have made more than</p> <p>3 \$5 million off of Dopamine Nation?</p> <p>4 MS. McNABB: Objection. Scope.</p> <p>5 THE WITNESS: I don't think so.</p> <p>6 BY MR. ERCOLE:</p> <p>7 Q. Do you know for sure?</p> <p>8 A. I don't know.</p> <p>9 Q. You also mentioned -- I think that your</p> <p>10 kids had used some of the social media platforms</p> <p>11 we've been talking about; is that right?</p> <p>12 MS. McNABB: Objection. Scope.</p> <p>13 THE WITNESS: Yes.</p> <p>14 BY MR. ERCOLE:</p> <p>15 Q. What -- do your -- how old are your</p> <p>16 children?</p> <p>17 A. I'm sorry?</p> <p>18 Q. How -- sorry. How old are your children?</p> <p>19 MS. McNABB: Same objection.</p> <p>20 THE WITNESS: My children are 18, 20, 22,</p> <p>21 and 23.</p> <p>22 BY MR. ERCOLE:</p> <p>23 Q. Do they currently use social media</p> <p>24 platforms?</p> <p>25 MS. McNABB: Same objection.</p>	<p style="text-align: right;">Page 101</p> <p>1 they use?</p> <p>2 MS. McNABB: Objection. Scope.</p> <p>3 THE WITNESS: I believe they're both -- I</p> <p>4 believe the older one is on Instagram. And they</p> <p>5 both use YouTube. And the younger one is on</p> <p>6 Instagram, YouTube, and Snapchat, and looks at</p> <p>7 TikTok.</p> <p>8 BY MR. ERCOLE:</p> <p>9 Q. Do you know when they started using social</p> <p>10 media?</p> <p>11 MS. McNABB: Objection. Scope.</p> <p>12 THE WITNESS: Yes. When they started high</p> <p>13 school.</p> <p>14 BY MR. ERCOLE:</p> <p>15 Q. Did they use social media before then?</p> <p>16 MS. McNABB: Objection. Scope.</p> <p>17 THE WITNESS: They didn't personally have</p> <p>18 digital devices before then. They might have used</p> <p>19 their friends' phones. It's very likely that they</p> <p>20 did, but not on their own personal devices.</p> <p>21 BY MR. ERCOLE:</p> <p>22 Q. When they started in -- when your children</p> <p>23 started in high school, did you get them</p> <p>24 smartphones?</p> <p>25 MS. McNABB: Objection. Scope.</p>

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<p style="text-align: right;">Page 102</p> <p>1 THE WITNESS: No, I did not.</p> <p>2 BY MR. ERCOLE:</p> <p>3 Q. Did they have personal devices when they</p> <p>4 started in high school?</p> <p>5 MS. McNABB: Objection. Scope.</p> <p>6 THE WITNESS: I already answered that</p> <p>7 question.</p> <p>8 BY MR. ERCOLE:</p> <p>9 Q. Did you allow them to use social media when</p> <p>10 they were in high school?</p> <p>11 MS. McNABB: Objection. Scope.</p> <p>12 THE WITNESS: I essentially had no more</p> <p>13 control over them at that point.</p> <p>14 BY MR. ERCOLE:</p> <p>15 Q. When they were in high school?</p> <p>16 A. M-hm.</p> <p>17 Q. Did they have smartphones when they were in</p> <p>18 high school?</p> <p>19 MS. McNABB: Objection. Scope.</p> <p>20 THE WITNESS: Yes. They purchased their</p> <p>21 own smartphones, got their own smartphone plans with</p> <p>22 their own money.</p> <p>23 BY MR. ERCOLE:</p> <p>24 Q. As their parent, did you tell them you</p> <p>25 shouldn't be obtaining these smartphones because</p>	<p style="text-align: right;">Page 104</p> <p>1 children that you've identified had the trouble?</p> <p>2 A. The youngest one.</p> <p>3 MS. McNABB: Objection. Scope.</p> <p>4 BY MR. ERCOLE:</p> <p>5 Q. The one who's currently 18?</p> <p>6 A. Yes.</p> <p>7 Q. Was he addicted to something?</p> <p>8 MS. McNABB: Objection. Scope.</p> <p>9 THE WITNESS: I believe he was using</p> <p>10 defendants' platforms in an addictive way.</p> <p>11 BY MR. ERCOLE:</p> <p>12 Q. Which platforms was he using in an</p> <p>13 addictive way?</p> <p>14 MS. McNABB: Objection. Scope.</p> <p>15 THE WITNESS: Instagram, Snapchat, YouTube,</p> <p>16 TikTok.</p> <p>17 BY MR. ERCOLE:</p> <p>18 Q. Did he also have a video game addiction?</p> <p>19 MS. McNABB: Objection. Scope.</p> <p>20 THE WITNESS: He also struggled with</p> <p>21 managing his video game consumption.</p> <p>22 BY MR. ERCOLE:</p> <p>23 Q. In your view, did he have a video game</p> <p>24 addiction?</p> <p>25 MS. McNABB: Objection. Scope.</p>
<p style="text-align: right;">Page 103</p> <p>1 it's like a syringe with heroin?</p> <p>2 MS. McNABB: Objection. Scope.</p> <p>3 THE WITNESS: I didn't use that exact</p> <p>4 language, but I did express my concern, in</p> <p>5 particular, about the defendants' platforms.</p> <p>6 BY MR. ERCOLE:</p> <p>7 Q. About smartphones generally?</p> <p>8 MS. McNABB: Objection.</p> <p>9 THE WITNESS: Mostly about the defendants'</p> <p>10 platforms and the smartphones as a portal to those</p> <p>11 platforms. But primarily about social media, the</p> <p>12 defendants' platforms.</p> <p>13 BY MR. ERCOLE:</p> <p>14 Q. Did you ever tell your kids that they can't</p> <p>15 bring their smartphones into the -- into your home</p> <p>16 because you viewed smartphones as a syringe with</p> <p>17 heroin?</p> <p>18 MS. McNABB: Objection. Scope.</p> <p>19 THE WITNESS: Three of my children seemed</p> <p>20 able to moderate their consumption. One of my</p> <p>21 children had more trouble, and so we took his</p> <p>22 smartphone away.</p> <p>23 BY MR. ERCOLE:</p> <p>24 Q. Was -- which -- and I'm not asking for</p> <p>25 particular names, but which of the -- the four</p>	<p style="text-align: right;">Page 105</p> <p>1 THE WITNESS: It was heading in that</p> <p>2 direction.</p> <p>3 BY MR. ERCOLE:</p> <p>4 Q. In your view, was he addicted to social</p> <p>5 media?</p> <p>6 MS. McNABB: Objection. Scope.</p> <p>7 THE WITNESS: It was heading in that</p> <p>8 direction.</p> <p>9 BY MR. ERCOLE:</p> <p>10 Q. What did you do to address that issue?</p> <p>11 MS. McNABB: Objection. Scope.</p> <p>12 THE WITNESS: We took his smartphone away</p> <p>13 from him.</p> <p>14 BY MR. ERCOLE:</p> <p>15 Q. How long did you take it away from him?</p> <p>16 MS. McNABB: Objection. Scope.</p> <p>17 THE WITNESS: One year.</p> <p>18 BY MR. ERCOLE:</p> <p>19 Q. Does he now have a smartphone?</p> <p>20 MS. McNABB: Objection. Scope.</p> <p>21 THE WITNESS: Yes.</p> <p>22 BY MR. ERCOLE:</p> <p>23 Q. Is he addicted to social media now?</p> <p>24 MS. McNABB: Objection. Scope.</p> <p>25 THE WITNESS: It's a constant struggle.</p>

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<p style="text-align: right;">Page 106</p> <p>1 BY MR. ERCOLE:</p> <p>2 Q. Is he addicted to video games now?</p> <p>3 MS. McNABB: Objection. Scope.</p> <p>4 THE WITNESS: It's an ongoing struggle.</p> <p>5 BY MR. ERCOLE:</p> <p>6 Q. Anything else that you believe he's</p> <p>7 addicted to?</p> <p>8 MS. McNABB: Objection. Scope.</p> <p>9 THE WITNESS: No.</p> <p>10 BY MR. ERCOLE:</p> <p>11 Q. When did you first get Internet in your</p> <p>12 house?</p> <p>13 MS. McNABB: Objection. Scope.</p> <p>14 BY MR. ERCOLE:</p> <p>15 Q. I was -- I was reading some article about</p> <p>16 that, and I just wanted to ask a follow-up question.</p> <p>17 A. Yeah. So when our eldest started high</p> <p>18 school, we got Internet to the house.</p> <p>19 Q. Do you remember when that was? Like, 2017?</p> <p>20 A. Let's see. She's 23 now. So she would</p> <p>21 have been 16 then.</p> <p>22 That sounds about right.</p> <p>23 Q. So 2017 was the first time that you ever</p> <p>24 had Internet in your -- in your house?</p> <p>25 A. Yes, that sounds about right. I can't give</p>	<p style="text-align: right;">Page 108</p> <p>1 BY MR. ERCOLE:</p> <p>2 Q. Sure.</p> <p>3 Parental control -- are you aware there's</p> <p>4 applications that you can download onto your phone</p> <p>5 as a parent and limit the access and usage that</p> <p>6 children have to the Internet or other Internet</p> <p>7 sites and platforms?</p> <p>8 MS. McNABB: Objection. Scope.</p> <p>9 THE WITNESS: I never -- I never used any</p> <p>10 of those.</p> <p>11 BY MR. ERCOLE:</p> <p>12 Q. Dr. Lembke, with respect to your clinical</p> <p>13 practice, in 2024, how many -- approximately --</p> <p>14 again, approximately how many hours a week did you</p> <p>15 spend seeing patients?</p> <p>16 A. I see patients about one to two days per</p> <p>17 week.</p> <p>18 Q. And on those days, how many hour -- like,</p> <p>19 how many hours during that time will you spend with</p> <p>20 patients?</p> <p>21 A. So it's a full day on Tuesdays and a half</p> <p>22 day on Mondays.</p> <p>23 Q. When you say "full day," what does that</p> <p>24 mean?</p> <p>25 A. 8:00 to 5:00, 8:00 to 4:00.</p>
<p style="text-align: right;">Page 107</p> <p>1 you an exact date, but that's approximately correct.</p> <p>2 Q. Have you -- with respect to your -- your</p> <p>3 18-year-old son, or son who's now 18 years old, you</p> <p>4 mentioned you took his smartphone away for a -- for</p> <p>5 a year and then you gave it back to them -- him; is</p> <p>6 that correct?</p> <p>7 A. (Nonverbal response.)</p> <p>8 MS. McNABB: Objection. Scope.</p> <p>9 BY MR. ERCOLE:</p> <p>10 Q. Have you ever blocked his access to social</p> <p>11 media platforms?</p> <p>12 A. No. Those parental controls are far too</p> <p>13 complicated. I can't figure them out.</p> <p>14 Q. Did you ever try and do it?</p> <p>15 A. I think I tried at one point and couldn't</p> <p>16 figure it out.</p> <p>17 Q. What platform did you try and do it with?</p> <p>18 A. I don't remember.</p> <p>19 Q. Did you ever -- did you ever use any</p> <p>20 parental controls applications separate from the</p> <p>21 parental control features on the defendants'</p> <p>22 application to monitor or limit your son's usage?</p> <p>23 MS. McNABB: Objection. Scope.</p> <p>24 THE WITNESS: What do you mean by "parental</p> <p>25 control"? Could you say the question again?</p>	<p style="text-align: right;">Page 109</p> <p>1 Q. And a half day is like 8:00 to 12:00 or so?</p> <p>2 A. Yeah.</p> <p>3 Q. And that's currently; is that right?</p> <p>4 A. (Nonverbal response.)</p> <p>5 Q. How about in 2024? How about last year?</p> <p>6 Was that the same, similar, increased, decreased?</p> <p>7 A. The same.</p> <p>8 Q. And on a -- on an average day where you're</p> <p>9 there for the full day, approximately -- again, not</p> <p>10 holding you to this, but approximately how many</p> <p>11 patients will you see?</p> <p>12 A. It averages between 10 and 20.</p> <p>13 Q. You're -- and what is the -- is there a</p> <p>14 specific name for the -- I should know this, but I</p> <p>15 don't.</p> <p>16 Is there a specific name for the clinic or</p> <p>17 practice that you work at?</p> <p>18 A. It's called the Stanford Addiction Medicine</p> <p>19 Dual Diagnosis Clinic.</p> <p>20 Q. What does "dual diagnosis" mean?</p> <p>21 A. Dual diagnosis means that the patients who</p> <p>22 are seen in our clinic have a psychiatric disorder</p> <p>23 of any kind, as well as a co-occurring addictive</p> <p>24 disorder of any kind.</p> <p>25 Q. Your -- am I correct that your clinic</p>

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<p style="text-align: right;">Page 110</p> <p>1 refers patients who are -- can I say "clinic"? Is 2 that okay? 3 What word should I use for that? 4 A. It is a clinic. 5 Q. Okay. 6 A. Yes. 7 Q. I want to make sure I get that right. 8 My understanding -- and tell me if I'm 9 wrong, but my understanding is your clinic refers 10 patients under 18 to a child psychiatry practice; is 11 that right? 12 A. So I am the TOBI director of our recovery 13 clinic, which is an adolescent Addiction Medicine 14 Dual Diagnosis Clinic. 15 So 18 and over goes to the adult clinic, 16 and anybody under 18 goes to the youth recovery 17 clinic. 18 Q. Do you personally treat individuals under 19 18? 20 A. Very rarely. 21 Q. When you say "very rarely," what does that 22 mean? 23 A. Typically, I see patients in the adult 24 clinic, but many of those patients began using and 25 got addicted to defendants' social media platforms</p>	<p style="text-align: right;">Page 112</p> <p>1 We also have many patients who are in 2 long-term recovery from addiction. And most of our 3 treatment is focused on their co-occurring 4 psychiatric disorders. 5 So we're managing their schizophrenia, 6 their eating disorder, their bipolar disorder, their 7 depression. And their addictive disorder is more 8 remote; certainly a point of attention and regular 9 consultation, but not active for them. 10 Q. Would you agree that the majority of 11 patients you treat have either a substance abuse 12 disorder or a chemical dependency problem? 13 A. No. 14 Q. Has that ever been true? 15 A. Yes. It was true in the past. 16 Q. When was that true? 17 A. I would say that was true when I began in 18 practice in the late 1990s. But with the advent of 19 digital media, social media, other forms of 20 addictive media, we began seeing more and more 21 patients with behavioral addictions to gambling, to 22 pornography, to social media, to gaming. And those 23 patients now make up a significant portion of our 24 practice. 25 Q. How about in 2021? Would you agree that</p>
<p style="text-align: right;">Page 111</p> <p>1 in their teens. 2 Q. And just sticking with the patients that 3 you treat, when was the last time you treated 4 someone who was under 18? 5 A. I can't remember. It's been some time. 6 Q. And in order for a patient to come in to 7 your clinic, he or she must already have an 8 addiction or be diagnosed with an addiction; is that 9 correct? 10 A. No. 11 Q. Do you treat mental disorders occurring in 12 the absence of an addiction? 13 A. Occasionally, we will have a patient who is 14 there because they are wondering if they are 15 struggling with addiction, and we might make the 16 determination that they're not. And then we might 17 provide some assessment for them. But generally 18 they wouldn't remain in our clinic without a 19 diagnosis of some degree of either addictive use or 20 misuse or risky use or physiologic dependence 21 without a use disorder. 22 So there -- it's a -- it's a spectrum 23 disorder, and there are many different types of use 24 disorders that don't necessarily meet a threshold 25 criteria for an active addiction.</p>	<p style="text-align: right;">Page 113</p> <p>1 the majority of patients that you treated either had 2 a substance abuse disorder or a chemical dependency 3 problem? 4 A. The majority, yes. 5 Q. How about in 2022? 6 A. You know, I don't -- I don't have numbers 7 on this. I -- I can't tell you what the percentage 8 is of one type of addiction versus another. 9 My overall sense is that the number of 10 people presenting with what we call behavioral 11 addictions -- that is, addictions to a behavior, a 12 process, rather than to something they ingest -- has 13 steadily been increasing over the last two decades, 14 corresponding with the advent of the Internet and 15 various forms of addictive digital media, including 16 the defendants' platforms. 17 So we're just seeing more and more over 18 time. I think there was a real acceleration of this 19 problem during COVID, understandably, with more and 20 more people spending more time online. So we saw 21 many more since COVID in terms of people addicted to 22 social media and other forms of digital media. 23 Q. For social media, is -- would you consider 24 WhatsApp to be social media? 25 A. I'm not that familiar with the WhatsApp</p>

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<p style="text-align: right;">Page 114</p> <p>1 platform. I've not studied it. But it sounds like 2 a form of social media, yeah. 3 Q. How about LinkedIn? 4 A. Yes. 5 Q. How about Pinterest? 6 A. I haven't really studied Pinterest, but I 7 would think so. 8 Q. Discord? 9 A. Yes, I think so. 10 Q. Tumblr? 11 A. Not familiar with Tumblr. 12 Q. Prime Video? 13 A. Not familiar with Prime Video. 14 Q. Have you treated patients suffering from an 15 addiction to television? 16 A. No. And I wouldn't really expect to. 17 Television is not interactive and tailored for the 18 individual consumer the way that social media is. 19 Q. How about -- I'm just going to throw out an 20 example. 21 How about Netflix? Is that -- is that -- 22 A. I've certainly seen patients who consume 23 far too much Netflix in combination with other 24 digital media platforms. Many of our patients 25 consume more than one social media platform or</p>	<p style="text-align: right;">Page 116</p> <p>1 addicted to looking at things on the Internet that 2 are not social media? 3 A. Absolutely. But it's not the Internet, 4 per se, that they're addicted to. It's not the ones 5 and zero that allow for the medium itself. It's the 6 platforms. And when people are compulsively surfing 7 the Internet, they're typically doing so on 8 defendants' platforms or other addictive digital 9 media. 10 Q. Okay. When you say people are 11 compulsive -- like, I'm trying to understand this. 12 Like, what basis do you have to suggest that when 13 people are compulsively surfing the Internet, they 14 are typically doing so on defendants' platforms? 15 A. Survey studies done in adolescence, in kids 16 and minors, and that's the focus of this litigation, 17 show that much of the time, if not most of the time, 18 kids are on the Internet, they are on defendants' 19 platforms. 20 Q. What studies? 21 A. As I mentioned, there are Pew surveys out 22 there asking teens where they're spending their time 23 and then ranking them. I think that defendants' 24 platforms appear in the first ten and certainly some 25 of the defendants here in the first five. I think</p>
<p style="text-align: right;">Page 115</p> <p>1 one -- more than one digital media platform. 2 Q. How do you go about determining whether or 3 not a patient's use disorder or, in your view, 4 addiction is specific to social media versus their 5 phone? 6 A. It's very clear to me that the phone is 7 simply the portal. If the phone didn't give them 8 access to defendants' social media platforms, the 9 phone would have no salience for them. 10 Q. How about -- how do you go about 11 determining whether use disorder addiction is due to 12 social media versus the Internet generally? 13 A. Social media is one of the forms of digital 14 media that people can access through the Internet. 15 Without the Internet, social media would not be 16 possible. 17 But it's the addictive social media 18 platforms that create the pathology. If the 19 Internet gave people access to things that weren't 20 designed to be addictive, they wouldn't spend time 21 on the Internet. 22 Q. Well, haven't you ever, you know, heard the 23 phrase "surfing the Internet"? 24 A. M-hm. 25 Q. Have you -- do you think people can get</p>	<p style="text-align: right;">Page 117</p> <p>1 TikTok is number one. And then Insta, Snapchat, and 2 YouTube are both in there as among the most popular 3 platforms that minors will use when they're on the 4 Internet. 5 Q. Any other studies? 6 A. I'm not recalling any other specific 7 studies, but I believe that that's well-established. 8 Q. If you -- in your -- in your practice, have 9 you diagnosed someone with social media -- is it 10 social media addiction, or what do you call -- what 11 do you call sort of a -- someone who compulsively 12 uses social media? What is -- what language do you 13 use for that? 14 A. I use "social media use disorder" just to 15 be consistent with the DSM, which uses the term "use 16 disorder" to describe addiction to various 17 substances. If it's alcohol, then it's called 18 alcohol use disorder. If it's nicotine, it's 19 nicotine use disorder. Gambling disorder and social 20 media use disorder. 21 Q. And we'll get into the, sort of, DSM 22 language and what that recognizes or doesn't 23 recognize in a little bit, but ... 24 But you use -- so if you're -- if someone 25 presents to you and you believe that person has</p>

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<p style="text-align: right;">Page 118</p> <p>1 social media use disorder, that's what you would 2 write in your records; is that correct? 3 A. Yes, or something equivalent. I might -- I 4 might write "social" -- if I felt it met threshold 5 criteria for addiction, I would write "social media 6 use disorder" or "social media disorder" or "social 7 media addiction." 8 If I felt that it was harmful use but not 9 meeting full criteria for addiction, because this is 10 a spectrum disorder, I might -- I might write 11 "compulsive over-engagement with social media, risky 12 social media use, harmful or problematic social 13 media use." 14 To me, these are all getting at the same 15 basic construct which is that this individual is 16 using social media in a way that's ultimately 17 harmful for their physical and/or mental health or 18 harmful in their lives in some other way. 19 Q. It sounds like, though, that there's a -- 20 in your view, a distinction between compulsive or 21 even harmful use of social media and addiction to 22 social media; is that right? 23 A. It's a spectrum and it's a judgment call 24 when your compulsive overuse or risky use 25 transitions into a use disorder.</p>	<p style="text-align: right;">Page 120</p> <p>1 judgment? 2 A. It can be made in various ways. If it's in 3 a clinical setting, it will be the mental healthcare 4 provider making that judgment. If it's in a 5 population study, it will be one of the scales 6 making that judgment. 7 In my opinion, parents are pretty good at 8 making that judgment. And often parent concern is 9 what will drive a youth coming into our clinic to be 10 evaluated. 11 Q. And when you say scales are driving that -- 12 that judgment, what do -- what do you mean? What 13 are you referring to when you say "scales"? 14 A. The various validated scales out there to 15 assess for social media addiction. 16 Q. Of your patients that suffer from an 17 addiction, what percentage have you diagnosed with 18 either social media addiction or social media use 19 disorder? 20 A. I haven't counted exactly how many, but if 21 I had to estimate, I would say it's probably in our 22 clinic population -- well, in the adult population 23 that we see, it's probably about 5 to 10 percent, if 24 I had to guess. 25 In our youth population, especially</p>
<p style="text-align: right;">Page 119</p> <p>1 When we're dealing with a severe social 2 media use disorder, it's quite obvious to all. 3 Pretty much anybody could identify it as 4 problematic. 5 When you get down into the more milder 6 forms, you know, it can be a judgment call. Whether 7 this has really crossed over into addiction, as you 8 know or you may know, there is no brain scan or 9 blood test to diagnose addiction. We base it on 10 phenomenology, which is these patterns of behavior 11 that are highly recognizable and highly consistent 12 with the same patterns of behavior that we see when 13 people get addicted to drugs and alcohol. 14 Q. Like opioids; right? 15 A. Like opioids, yeah. 16 Q. And so, in your view, social media 17 addiction, to use your term, is the same as opioid 18 addiction; right? 19 MS. McNABB: Objection. Misstates. 20 THE WITNESS: There are many similarities. 21 I didn't say they're exactly the same. There are 22 many similarities. And then the overall gestalt is 23 centrally the same disease process. 24 BY MR. ERCOLE: 25 Q. When you say "judgment," who makes that</p>	<p style="text-align: right;">Page 121</p> <p>1 post-COVID, we're seeing very high rates of kids 2 coming in with social media addiction. I don't know 3 the exact number. Again, if I had to guess, I would 4 put it maybe somewhere around 20 to 30 percent. 5 Q. And those -- the youth clinic that you're 6 referring to, in terms of assessing whether someone 7 has addiction or not, they're using your definition 8 of addiction; right? 9 A. Who are -- who are you referring to? 10 Q. Whoever is making the diagnosis in the 11 youth clinic that you're referring to -- 12 A. Right. 13 Q. -- right? 14 So you talked about how you are involved 15 with the youth clinic -- 16 A. Right. 17 Q. -- is that correct? 18 A. Yes. 19 Q. Okay. You don't see patients in the youth 20 clinic, though; right? 21 A. No. 22 Q. Okay. But presumably, whoever is 23 diagnosing kids who come in for youth clinic is 24 using a particular definition of "social media use 25 disorder" or "social media addiction"; correct?</p>

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<p style="text-align: right;">Page 122</p> <p>1 A. They're using the validated, standard 2 definition which I summarize in my report with the 3 four Cs, tolerance and withdrawal. That's not my 4 definition. That definition mirrors definitions 5 that you will find in the DSM, in -- you know, 6 definitions put forward by the World Health 7 Organization, the EPA, in the medical literature, in 8 the various scales. 9 Q. We may disagree about that, but we'll get 10 to that in a second. 11 But for whatever it's -- whatever it's 12 worth, they're using the definition laid out in your 13 report; correct? 14 A. Yes. 15 Q. Okay. I think in the -- do you -- when you 16 diagnose patients with social media addiction or 17 social media use disorder, do you diagnose them with 18 an addiction to a particular type of platform or to 19 social media generally? 20 A. We always ask them what platforms they're 21 using, how much they're using those platforms. So 22 we look at the specific platform, and we look at use 23 more broadly. 24 Q. Would you -- you'd have to write something 25 in the records; right?</p>	<p style="text-align: right;">Page 124</p> <p>1 Q. Video gaming? 2 A. Yes. 3 Q. Texting? 4 A. No. 5 Q. Working too much? 6 A. So we do see that. It really depends, 7 though, on the particular person and their 8 circumstance. It's usually not the primary 9 diagnosis. 10 Q. Have you diagnosed someone with that, being 11 addicted to their job? 12 A. I don't believe I've diagnosed that. 13 Q. Have you ever given interviews where you've 14 said you've been addicted to work? 15 A. I don't remember. 16 Q. Too many interviews? 17 MS. McNABB: Objection. Argumentative. 18 BY MR. ERCOLE: 19 Q. How about addicted to exercising? Diagnose 20 people with that? 21 A. Yes. 22 Q. Diagnose people -- how about diagnosing 23 patients with being addicted to reading books? 24 A. No. Actually, that's not true. I had one 25 patient who I'm recalling now was addicted to</p>
<p style="text-align: right;">Page 123</p> <p>1 A. M-hm. 2 Q. Do you write "social media use disorder 3 addiction," or do you specify addiction to a 4 particular platform? 5 A. We'll often write both. 6 Q. Does -- if you -- does insurance cover 7 patients who come to your clinic for treatment? 8 A. Most of the time. 9 Q. Does insurance cover treatment for social 10 media use disorder or addiction? 11 A. Typically they will cover those visits. 12 Q. If you write in your records that someone 13 needs treatment for social media use disorder or 14 social media addiction, will insurance cover that? 15 A. Yes, they'll cover it, at least to my 16 knowledge. 17 Q. Have you diagnosed any of your patients 18 with an addiction to online shopping? 19 A. Yes. 20 Q. Online gambling? 21 A. Yes. 22 Q. Pornography? 23 A. Yes. 24 Q. Dating apps? 25 A. Yes.</p>	<p style="text-align: right;">Page 125</p> <p>1 romance novels. 2 Q. What types of romance novels? 3 A. It doesn't matter. It's the -- the overall 4 genre, the easy accessibility, the voluminous 5 quantity that's available now. 6 Q. How about any other -- we've talked about 7 social media -- you've diagnosed people with 8 social -- sorry, strike that. 9 Excuse me. You've diagnosed patients with 10 social media use disorder or addiction, and we've 11 talked about a bunch of other behavioral addictions 12 that you've also diagnosed people with. 13 What other ones have you diagnosed 14 patient -- what other behavioral addictions have you 15 diagnosed patients with? 16 A. Those are the main ones. 17 Q. You also diagnosed someone as being 18 addicted to water; correct? 19 A. I did not formally diagnose that. Again, 20 that was a very particular circumstance of an 21 individual who had a very severe alcohol addiction, 22 wasn't drinking alcohol, and then used water as a 23 replacement. I have not encountered any other 24 person who used water in that way. 25 In my using that example, I was really</p>

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<p style="text-align: right;">Page 126</p> <p>1 trying to highlight that once people develop the 2 disease of addiction, they're very vulnerable to 3 getting addicted to other things outside of their 4 specific drug of choice. 5 Q. Is there any type of behavior that someone 6 couldn't get addicted to? 7 A. Sure. 8 Q. Can you give me an example? 9 A. I think a better way for me to answer that 10 than giving specific examples is to just emphasize 11 that the medium is really what matters. And the 12 application of technology and the creation of design 13 features that make these various reinforcing 14 behaviors more potent, more accessible, more 15 bountiful, more novel, more uncertain, can turn 16 something that isn't necessarily that inherently 17 addictive into something that is very addictive, 18 including behaviors that we typically think of as 19 healthy, like human connection. 20 So, you know, friendship in the spirit -- 21 in -- in the ways in which we mean that term, 22 friendship is not addictive; right? Friendship is 23 healthy. It's positive. 24 But if you take friendship and create a 25 medium whereby human connection has now become a</p>	<p style="text-align: right;">Page 128</p> <p>1 are gambling in order to get addicted to gambling. 2 You need other people. You need the platform on 3 which gambling happens. You need, for example, 4 casinos or slot machines, right, or lottery tickets. 5 The digital medium has just expanded and 6 made more potent and more accessible many different 7 forms of gambling. And I would even argue that 8 social media has gamblification or gamification in 9 it so that it's in many ways very similar to 10 gambling. But you're gambling on, you know, what is 11 the next social reward that might be coming your 12 way. 13 Q. With respect to social media addiction or 14 social media use disorder, have any of your patients 15 ever committed a crime in order to access social 16 media? 17 A. I'm not sure I know the law well enough to 18 comment on that. 19 Q. How about any of your patients ever stolen 20 a car in order to be able to access social media? 21 A. I don't know of anyone who's stolen a car 22 to access social media. 23 Q. How about any of your patients ever winding 24 up in a dangerous neighborhood in order to access 25 social media?</p>
<p style="text-align: right;">Page 127</p> <p>1 drug, then all of a sudden you've got an addiction 2 because we are evolved to make human connections. 3 And the way -- the way that our brain gets us to 4 making the connections is to make it pleasurable or 5 reinforcing so that we want to do it again. 6 Q. So your testimony is that social media has 7 taken friendship and made it addictive; right? 8 MS. McNABB: Objection. 9 A. That's right, or at least defendants' 10 platforms. 11 Q. Thank you. Defendants' platforms. 12 But there could be other social media that 13 has done the same thing; right? 14 A. There could be, sure. 15 Q. Yeah. 16 With respect to gambling, right, gambling 17 can be on -- people can be addicted to gambling 18 online, but they also can be addicted to gambling, 19 in your view, outside of the Internet; right? 20 A. Yes. 21 Q. And in that instance, that's an example of 22 someone actually being addicted to the -- sort of 23 the aspect of gambling itself without any sort of 24 enhancement from media; correct? 25 A. Well, you need to have a place where people</p>	<p style="text-align: right;">Page 129</p> <p>1 A. I'm not aware of that, no. 2 Q. Any of your -- 3 A. Because, really, why would you have to -- 4 it's -- it's available everywhere. No need to go to 5 a specific geographic location to access it. 6 Q. How about any of your patients ever 7 physically assaulted someone in person in order to 8 access social media? 9 A. Yes. 10 Q. What happened there? 11 A. Frequently kids will become highly 12 disregulated if their parents try to restrict their 13 access to social media, including trying to assault 14 the parents or hurt themselves. 15 Q. And when you say that, you're speaking 16 about what you've learned from your work in the 17 child clinic; is that right? 18 A. Yes. So we're -- we have a team-based 19 approach to care. We discuss cases. 20 Q. In your view, you would consider the 21 United States to be an addicted nation; right? 22 A. I'm -- have I said that in an interview 23 before? Is that why you're asking me that? 24 Q. Yes. 25 A. Okay. I think that -- that it's clear that</p>

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<p style="text-align: right;">Page 130</p> <p>1 the rates of addiction are increasing in the 2 United States, again, because of our increased 3 access to highly potent, reinforcing drugs and 4 behaviors of all sorts. 5 Q. And you've also opined that "We've always 6 been addicted to something for as long as our 7 species has been on the planet"; correct? 8 A. Yes. But the number of people who are 9 getting addicted is increasing because of the 10 increased -- increased access and the number of 11 addictive products that are available today. 12 Q. Do you stand by that statement, that "We've 13 always been addicted to something for as long as our 14 species has been on the planet"? 15 A. Yes. 16 Q. Do you agree that our brains have -- in 17 your view, our brains have been wired to be 18 addicted? 19 A. I would phrase it a little bit differently. 20 I would say our brains evolve to reflexively 21 approach pleasure and avoid pain. And that ancient 22 wiring makes us very vulnerable to addiction if we 23 are in an ecosystem where we don't have to work very 24 hard to get highly reinforcing substances and 25 behaviors that never run out.</p>	<p style="text-align: right;">Page 132</p> <p>1 Q. -- there's a sentence that states, if you 2 turn over to the next page (as read): 3 "If the behavior is rewarding or 4 problem-solving, the individual will 5 continue to engage in it, especially 6 given unlimited access, abundant 7 quantity, high potency, novelty, and 8 uncertainty." 9 Do you see that? 10 A. Yes, I do see that. 11 Q. And it says (as read): 12 "Over time, the individual finds it 13 difficult to stop even when they want to, 14 eventually resulting in continued 15 compulsive use despite harm." 16 Do you see that? 17 A. Yes, I see that. 18 Q. And you stand by those opinions; correct? 19 A. Yes, I do. 20 Q. Wouldn't this definition cover spending 21 time with friends? 22 A. No. 23 Q. Why not? 24 A. Because there -- we are social creatures. 25 We are evolved to make connections with other</p>
<p style="text-align: right;">Page 131</p> <p>1 Q. If you turn to page -- let's go to your 2 report, the JCCP report. 3 A. Yeah. 4 Q. I think it's Exhibit 3. 5 If you turn to page 6. And it's the first 6 opinion where you say (as read): 7 "Addiction is a chronic, relapsing, 8 and remitting brain disease, as evidenced 9 by continued, compulsive" -- 10 Or excuse me. I apologize. I think it's 11 page 5 -- 12 A. Okay. 13 Q. -- of your report. It's the first opinion. 14 A. Yeah. 15 Q. And it says (as read): 16 "Addiction is a chronic, relapsing, 17 and remitting brain disease, as evidenced 18 by continued, compulsive use of a 19 substance or engagement in a behavior, 20 despite harmful consequences." 21 Do you see that? 22 A. Yes, I do see that. 23 Q. And then if you go to, like, the 1a 24 there -- 25 A. M-hm.</p>	<p style="text-align: right;">Page 133</p> <p>1 humans. That's fundamental to our survival. And 2 when we do that, in a healthy way, then that is good 3 for us. 4 But if then we take that natural reward and 5 we adulterate it in some way, like through 6 defendants' platforms, then we've turned a healthy 7 human behavior into a potentially addictive drug. 8 Q. But who's making this decision -- this 9 distinction between what's healthy and what's not 10 healthy? 11 A. Well, I mean, we as a society are making 12 those distinctions. 13 Q. Okay. But if we look here, like, just 14 focus on the language, "if the behavior is rewarding 15 or problem-solving" -- do you see that? 16 A. M-hm. 17 Q. Isn't spending time with friends rewarding? 18 A. Yes. I mean, it's -- it's what we call a 19 natural reward. 20 Q. Okay. And then "the individual will 21 continue to engage in it," right? 22 People like spending time with friends, so 23 they want to spend time with friends; correct? 24 A. M-hm. 25 Q. (As read):</p>

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<p style="text-align: right;">Page 134</p> <p>1 "Over time, the individual finds it 2 difficult to stop even when they want to, 3 eventually resulting in continued, 4 compulsive use despite harm." 5 Why wouldn't spending time with friends, 6 which is rewarding -- why wouldn't that then become 7 something that some people find difficult to stop 8 even when they want to? 9 MS. McNABB: Objection. Speculation. 10 THE WITNESS: Well, you've skipped over the 11 most important distinction, which is "especially 12 given unlimited access, abundant quantity, high 13 potency, novelty, and uncertainty." 14 So friendship is typically not unlimited. 15 You have to go outside and find the people. And 16 there are only physically so many people you can 17 find and encounter. 18 Furthermore, friendship takes work. 19 There's give and take. There's disagreements. 20 There's frustration. You have to negotiate. You 21 have to tolerate differences. You can't just swipe 22 right or swipe left and find a prettier face or 23 someone who's more interesting or somebody who 24 agrees with you. 25 Our friendships with real people, in real</p>	<p style="text-align: right;">Page 136</p> <p>1 A. They're not taking place as much as the 2 negative is taking place. 3 Q. Have you -- but you've never actually used 4 any of the defendants' platforms except YouTube; 5 right? 6 A. I have studied these platforms. I don't 7 need to be a regular consumer of these platforms. 8 Furthermore, in my report itself, speaking 9 of YouTube, they do their own comparison of good 10 things about using YouTube and bad things about 11 using YouTube. YouTube has both positive and 12 negative well-being effects, and they list them. 13 And it looks to me like the negative effects that 14 YouTube itself has found outweigh the positive 15 effects. 16 So it's always going to be a risk-benefit 17 analysis in a given population of users. And 18 children are a vulnerable population. And it is my 19 opinion that the negatives outweigh the positives. 20 Q. And who does that risk-benefit analysis? 21 A. We're doing it right now as part of this 22 litigation. You know, parents are doing it every 23 day, trying to raise their kids in this environment. 24 Clinicians are doing it. People who are doing 25 research are doing it.</p>
<p style="text-align: right;">Page 135</p> <p>1 life, are not necessarily novel. In order to deepen 2 those relationships over time, you're going to have 3 to tolerate and encounter boredom and sameness. 4 You're not always get to get newness if you really 5 want to maintain a quality friendship through time. 6 You're not going to be able to get 7 intermittent, positive reinforcement every time you 8 go talk to your friend. Maybe they'll give you some 9 negative constructive criticism that you'll have to 10 take to heart that will be difficult to hear. 11 So the essential difference here between 12 friendship, healthy friendship, is that it has not 13 been adulterated through the digital platform and 14 the specific design features that make it easy to 15 access hundreds, if not millions, of people who are 16 going to tell us exactly what we want to hear, 17 exactly when we want to hear it. And if we don't 18 like what they say, we can just get rid of them and 19 find somebody else, et cetera, et cetera. 20 So there's a real difference between 21 healthy friendship and what is happening online on 22 defendants' platforms. 23 BY MR. ERCOLE: 24 Q. Aren't all of those positive and negative 25 things you just described also taking place online?</p>	<p style="text-align: right;">Page 137</p> <p>1 Q. We'll look at some of the documents that 2 you selectively decided to use in your report a 3 little bit later, but -- 4 MS. McNABB: Objection. Argumentative. 5 BY MR. ERCOLE: 6 Q. We talked about the -- that -- you know, 7 things that you've been addicted to. You mentioned 8 romance novels in the past. 9 Anything else that you've been addicted to? 10 A. Not to that extent, no. 11 Q. The release of dopamine is how we perceive 12 pleasure; is that right? 13 A. It's intimately involved in the experience 14 of pleasure, reward, and motivation, yes. 15 Q. And pleasure can come from just about 16 anything; right? 17 MS. McNABB: Objection. 18 THE WITNESS: Pleasure can come from many 19 different sources, yes. 20 BY MR. ERCOLE: 21 Q. Every form of communication, digital or 22 nondigital, can potentially give someone a dopamine 23 release; right? 24 A. Potentially, yes. 25 Q. Even anticipating something pleasurable can</p>

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<p style="text-align: right;">Page 138</p> <p>1 give you a dopamine release; right?</p> <p>2 A. Yes.</p> <p>3 Q. Like listening to classical music, for</p> <p>4 instance?</p> <p>5 A. Yes.</p> <p>6 Q. Playing with your pet?</p> <p>7 A. Yes.</p> <p>8 Q. Successfully building a shelf in your</p> <p>9 house?</p> <p>10 A. Sure.</p> <p>11 Q. And what makes something addictive is the</p> <p>12 amount of dopamine the behavior releases in your</p> <p>13 view; right?</p> <p>14 MS. McNABB: Objection. Misstates.</p> <p>15 THE WITNESS: I'm sorry. Could you say the</p> <p>16 question again?</p> <p>17 BY MR. ERCOLE:</p> <p>18 Q. Yeah, sure.</p> <p>19 In your view what makes something addictive</p> <p>20 is the amount of dopamine that the behavior</p> <p>21 releases; right?</p> <p>22 A. Well, we don't diagnose or assess addiction</p> <p>23 based on dopamine release; right?</p> <p>24 We're not at that state yet where we can</p> <p>25 put somebody in a brain scan and say, "Aha, they</p>	<p style="text-align: right;">Page 140</p> <p>1 BY MR. ERCOLE:</p> <p>2 Q. I will do better to make sure that you</p> <p>3 finish your response before I -- I respond. And if</p> <p>4 I step on your toes, I apologize for that. And your</p> <p>5 counsel can yell at me, and I will -- I will, again,</p> <p>6 say I will try to do better. So I apologize for</p> <p>7 that.</p> <p>8 Are you aware of any study that has</p> <p>9 determined how much dopamine is released by the use</p> <p>10 of social media?</p> <p>11 A. I'm not aware of any study that quantifies</p> <p>12 the absolute levels of dopamine, no.</p> <p>13 Q. And by "social media," I mean the</p> <p>14 defendants' platforms here; right?</p> <p>15 A. Yeah.</p> <p>16 Q. Will the amount of dopamine released depend</p> <p>17 on what content is being viewed on social media?</p> <p>18 A. I mean, the amount dopamine released is</p> <p>19 going to depend on the affinity that a given</p> <p>20 individual has for that particular medium. Some</p> <p>21 people are more responsive to social media and</p> <p>22 social cues than others. It will depend on the</p> <p>23 stage of their development. We know that teens are</p> <p>24 more sensitive to social cues than adults in</p> <p>25 general.</p>
<p style="text-align: right;">Page 139</p> <p>1 have addiction."</p> <p>2 But addiction is a brain disease. And we</p> <p>3 do know that when something is pleasurable or</p> <p>4 reinforcing, it will release dopamine. The more</p> <p>5 dopamine that's released, the faster that it's</p> <p>6 released, the more likely is that substance or</p> <p>7 behavior to be reinforcing for a given individual.</p> <p>8 Q. Right.</p> <p>9 In your book you write (as read):</p> <p>10 "Dopamine is used to measure the</p> <p>11 addictive potential of any behavior or</p> <p>12 drug."</p> <p>13 Right?</p> <p>14 A. That's qualified as that's how</p> <p>15 neuroscientists use it. It's kind of a common</p> <p>16 currency for measuring the addictive potential of a</p> <p>17 behavior or -- yes, uh-huh. And that's in --</p> <p>18 usually in rodent studies.</p> <p>19 Q. Okay. And you stand by that statement,</p> <p>20 right --</p> <p>21 A. Yes, I do.</p> <p>22 Q. -- that you wrote in your book?</p> <p>23 Okay.</p> <p>24 (Stenographer admonishment.)</p> <p>25 (Discussion off the stenographic record.)</p>	<p style="text-align: right;">Page 141</p> <p>1 So it's going to depend on a number of</p> <p>2 different factors.</p> <p>3 Q. Are you -- are you aware of any study that</p> <p>4 shows that the release of dopamine is -- is more</p> <p>5 from -- sorry. Strike that. That's a terribly</p> <p>6 phrased question.</p> <p>7 Are you aware of any study showing that</p> <p>8 more dopamine is released from using social media</p> <p>9 than any other form of communication?</p> <p>10 A. I am aware of studies showing that the</p> <p>11 addictive design elements on defendants' platforms</p> <p>12 release more dopamine than social media without</p> <p>13 those addictive design elements; that is to say, I</p> <p>14 am inferring that more activation in the nucleus</p> <p>15 accumbens reward circuitry is consistent with</p> <p>16 dopamine release. I think it's reasonable to infer</p> <p>17 that.</p> <p>18 There are studies that I have cited showing</p> <p>19 that the design elements like the "likes" or the</p> <p>20 "tailored for you" are more reinforcing, that is,</p> <p>21 release more dopamine, than the same image with</p> <p>22 fewer likes or for a general audience.</p> <p>23 Q. So my question is a little bit different</p> <p>24 than that.</p> <p>25 A. Okay.</p>

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<p style="text-align: right;">Page 142</p> <p>1 Q. Are you aware of any study that shows that</p> <p>2 the -- that more dopamine released -- sorry. Strike</p> <p>3 that.</p> <p>4 Are you aware of any study showing that</p> <p>5 more dopamine is released by virtue of social</p> <p>6 interaction through social media versus social</p> <p>7 media -- social interaction in person?</p> <p>8 A. No. And that would be a very difficult</p> <p>9 study to design because I don't know how you would</p> <p>10 interact with a person in an fMRI machine.</p> <p>11 Q. Are you aware of any study showing that</p> <p>12 the -- that more dopamine is released from the use</p> <p>13 of social media than other behaviors like exercise?</p> <p>14 MS. McNABB: Objection. Speculation.</p> <p>15 THE WITNESS: I'm not aware of any study</p> <p>16 comparing dopamine release between social media and</p> <p>17 exercise.</p> <p>18 BY MR. ERCOLE:</p> <p>19 Q. How about -- are you aware of any study</p> <p>20 comparing dopamine release on social media to</p> <p>21 dopamine released through any other behavior outside</p> <p>22 of social media?</p> <p>23 MS. McNABB: Objection. Speculation.</p> <p>24 THE WITNESS: Give me one second to look at</p> <p>25 my report here.</p>	<p style="text-align: right;">Page 144</p> <p>1 at whether or not more dopamine released -- strike</p> <p>2 that.</p> <p>3 Whether more dopamine is released from a</p> <p>4 like on social media versus a compliment from</p> <p>5 someone in real life?</p> <p>6 A. No. But I do cite to studies showing that</p> <p>7 more activation in the reward pathway, a/k/a more</p> <p>8 dopamine release, occurs when a picture is liked by</p> <p>9 others than a picture that is not liked by others.</p> <p>10 Q. Sure.</p> <p>11 But I guess my question is a little bit</p> <p>12 more basic. And I -- look, I just don't have the</p> <p>13 scientific background here, so I'm still trying to</p> <p>14 get all this up to speed.</p> <p>15 But my understanding is, like, the -- sort</p> <p>16 of the key here is dopamine release; right? That's</p> <p>17 an important part of the addiction equation?</p> <p>18 A. Dopamine is a way to study the brain</p> <p>19 changes that occur when people go from adaptive</p> <p>20 recreational use to maladaptive addictive use.</p> <p>21 Q. Okay.</p> <p>22 A. So it's a way to try to get at what is</p> <p>23 going on in the brain. It's not the only way to do</p> <p>24 that, but it's -- it's, again, become a -- kind of a</p> <p>25 common currency for researchers to study that</p>
<p style="text-align: right;">Page 143</p> <p>1 So on page 16 of my report, I cite to a</p> <p>2 study by Izuma, et al., which is basically I'm</p> <p>3 looking at or comparing brain stimulation involved</p> <p>4 in a task related to acquiring a good reputation and</p> <p>5 comparing that to the part of the brain that gets</p> <p>6 activated during monetary reward.</p> <p>7 So essentially that you have a social</p> <p>8 reward being compared to a monetary reward and</p> <p>9 finding that a good reputation activated</p> <p>10 reward-related brain areas and overlapped with the</p> <p>11 areas activated by monetary rewards.</p> <p>12 BY MR. ERCOLE:</p> <p>13 Q. Okay. Any other studies?</p> <p>14 A. Not that I'm aware of right now.</p> <p>15 Q. Okay. And the study that you just</p> <p>16 referenced was a study involving what happens to the</p> <p>17 brain when someone acquires a good reputation;</p> <p>18 right?</p> <p>19 A. Yes, which is very relevant to social media</p> <p>20 because a lot of what people are going for on social</p> <p>21 media is social validation, enhanced reputation.</p> <p>22 And the medium allows for that through the addictive</p> <p>23 design elements, like the likes and the rankings,</p> <p>24 the shares, the comments.</p> <p>25 Q. Are you aware of any study that has looked</p>	<p style="text-align: right;">Page 145</p> <p>1 phenomenon in the brain's reward pathway.</p> <p>2 Q. If I pay my brother, for instance,</p> <p>3 hypothetically --</p> <p>4 A. Yes.</p> <p>5 Q. -- pay my brother a compliment and say,</p> <p>6 "Hey, surprisingly, you look nice today," and</p> <p>7 "surprisingly" is the key adjective in that</p> <p>8 particular phrase --</p> <p>9 A. Okay.</p> <p>10 Q. -- there -- his brain is going to release</p> <p>11 some dopamine, right, because that's a pleasurable</p> <p>12 response, I would think?</p> <p>13 A. We can infer that, yes, his brain is</p> <p>14 releasing dopamine in response to that compliment</p> <p>15 if -- if it felt good to him and it wasn't delivered</p> <p>16 in some kind of sarcastic way or, you know, a</p> <p>17 million times or what have you.</p> <p>18 Q. Is the -- is the -- which is a good</p> <p>19 clarification, given my relationship with my</p> <p>20 brother.</p> <p>21 But is the same -- if someone goes online</p> <p>22 and they -- someone pays them a compliment on one of</p> <p>23 the -- one of the defendants' social media</p> <p>24 platforms, based upon what you're saying,</p> <p>25 inferentially there will be some release of dopamine</p>

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<p style="text-align: right;">Page 146</p> <p>1 as well in response to that compliment; correct?</p> <p>2 A. Yeah. That's why -- that's why it feels</p> <p>3 good.</p> <p>4 Q. Yeah.</p> <p>5 Is more dopamine released when I pay my</p> <p>6 brother a compliment in person versus online, or is</p> <p>7 more released online versus when I pay my brother a</p> <p>8 compliment in person?</p> <p>9 A. So based on the behaviors that we see when</p> <p>10 people engage in interactions online, I believe that</p> <p>11 we can infer, although there are no studies showing</p> <p>12 this specifically, that there's more dopamine</p> <p>13 released on those online interactions in general</p> <p>14 because of the medium itself.</p> <p>15 Q. Okay. You can't point me to a study saying</p> <p>16 that?</p> <p>17 A. No.</p> <p>18 Q. Okay. You've opined in various -- strike</p> <p>19 that.</p> <p>20 You've done a lot of podcasts; right,</p> <p>21 Mrs. Lembke?</p> <p>22 A. Yes.</p> <p>23 Q. I apologize. Dr. Lembke.</p> <p>24 A. Yes.</p> <p>25 Q. You've opined in those podcasts that you</p>	<p style="text-align: right;">Page 148</p> <p>1 everything has become drugified in some way. Again,</p> <p>2 I use that word to address the characteristics that</p> <p>3 make something addictive or accessible, more potent,</p> <p>4 more novel, more bountiful, et cetera.</p> <p>5 BY MR. ERCOLE:</p> <p>6 Q. Let's turn to your CV.</p> <p>7 Let's turn to your CV, which is Exhibit 1</p> <p>8 to your report, which I believe is Exhibit 3 for</p> <p>9 purposes of the record.</p> <p>10 MS. McNABB: Exhibit 4 is the updated CV.</p> <p>11 MR. ERCOLE: Oh, okay. We can use that</p> <p>12 one.</p> <p>13 Thank you.</p> <p>14 BY MR. ERCOLE:</p> <p>15 Q. Let's turn to page 4 of this document,</p> <p>16 which is on the bottom LEMBKE -0012.</p> <p>17 This, I think, is Exhibit 4, Dr. Lembke.</p> <p>18 A. I think I'm looking at Exhibit 4, the</p> <p>19 federal report, the May report.</p> <p>20 Q. It's -- it's not. I would use --</p> <p>21 A. Okay.</p> <p>22 Q. Please use the -- the exhibit that we gave</p> <p>23 you, just for consistency here.</p> <p>24 A. Okay.</p> <p>25 Q. Thank you.</p>
<p style="text-align: right;">Page 147</p> <p>1 believe someone can be addicted to pain too; is that</p> <p>2 correct?</p> <p>3 A. We do see that, yes.</p> <p>4 Q. And in your clinical practice, you view</p> <p>5 your job as not to take away all of your patient's</p> <p>6 pain and suffering, but to make that suffering</p> <p>7 tolerable so that they can still find a life worth</p> <p>8 living; is that right?</p> <p>9 MS. McNABB: Objection. Form. Foundation.</p> <p>10 THE WITNESS: I'd like to see the -- the</p> <p>11 context in which I said that. I think that would be</p> <p>12 important.</p> <p>13 BY MR. ERCOLE:</p> <p>14 Q. Do you believe that we as a society have a</p> <p>15 phobia of pain?</p> <p>16 MS. McNABB: Same objection.</p> <p>17 THE WITNESS: I have said that, yes.</p> <p>18 BY MR. ERCOLE:</p> <p>19 Q. Do you believe that people should seek out</p> <p>20 and invite pain into our lives, physical pain and</p> <p>21 emotional pain?</p> <p>22 MS. McNABB: Same objection.</p> <p>23 THE WITNESS: I say that in the broader</p> <p>24 context of the unique challenges that I think we</p> <p>25 modern humans face living in a world where almost</p>	<p style="text-align: right;">Page 149</p> <p>1 A. Yeah, you're welcome.</p> <p>2 Q. So on page 4 there's something that says</p> <p>3 "Medical Licensure and Specialty Board</p> <p>4 Certification."</p> <p>5 Do you see that?</p> <p>6 A. Yeah.</p> <p>7 Q. Okay. What is the American Board of</p> <p>8 Addiction Medicine?</p> <p>9 A. The American Board of Addiction Medicine is</p> <p>10 a subspecialty certification board that was created</p> <p>11 before addiction medicine was recognized as a</p> <p>12 medical specialty in order to certify a level of</p> <p>13 expertise in that area.</p> <p>14 Q. You are no longer board certified in</p> <p>15 addiction medicine; correct?</p> <p>16 A. That is incorrect.</p> <p>17 Q. Okay.</p> <p>18 A. That -- the American Board of Addiction</p> <p>19 Medicine no longer exists because it's been</p> <p>20 preempted by the American Board of Preventive</p> <p>21 Medicine, which took under its umbrella the</p> <p>22 addiction medicine boards once addiction medicine</p> <p>23 became recognized as a medical subspecialty.</p> <p>24 Q. Does the American Board of Addiction</p> <p>25 Medicine still have a website?</p>

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<p style="text-align: right;">Page 150</p> <p>1 A. It may well do. I think it now continues 2 to serve as a certification for individuals who did 3 not go on to get their American Board of Preventive 4 Medicine boards. 5 But today, for example, when fellows 6 graduate from our addiction medicine fellowship, 7 they will sit for their addiction medicine boards as 8 sponsored by the American Board of Preventive 9 Medicine within the broader house of medical 10 subspecialties. 11 Q. So if I type your name into the website, 12 look out for the American Board of Addiction 13 Medicine, it won't appear then; correct? 14 A. I don't know. I didn't know they still had 15 a website. If you contact them and ask them what -- 16 was I certified between these dates, they will 17 certainly affirm that that is the case. 18 Q. And how about for the American Board of 19 Psychiatry and Neurology? Do you -- are you -- do 20 you remain board certified there? 21 A. Yes. 22 Q. When did you get your -- it says you were 23 recertified February 18th, 2013. 24 Do you see that? 25 A. Yes.</p>	<p style="text-align: right;">Page 152</p> <p>1 Q. If you go to page 11 of this document. I 2 think it's 11. 3 So it's LEMBKE 0- -- LEMBKE -19 on the 4 bottom right. 5 A. Yes. 6 Q. It says, "Current Funding." 7 Do you see that? 8 A. Yes. 9 Q. And the -- the first entry is for funding 10 by the Stanford Institute for Human Centered 11 Artificial Intelligence? 12 A. Yes. 13 Q. And it's something with the title "Addicted 14 by Design"? 15 A. M-hm. 16 Q. What's the status of this project? 17 A. It's ongoing. 18 Q. What are you studying? 19 A. Exactly what it says. Trying to contribute 20 to the literature on addictive media -- media 21 platforms. 22 Q. And does that include the defendants' 23 platforms in this case? 24 A. It would include the defendants' platforms. 25 Q. And when did funding begin in this case?</p>
<p style="text-align: right;">Page 151</p> <p>1 Q. And that usually lasts ten years, I think? 2 A. Yes. 3 Q. Okay. When did you recertify? 4 A. I recertified in 2013. 5 Q. And then how -- right. It usually lasts 6 ten years. 7 A. M-hm. 8 Q. So have you recertified since then? 9 A. I recertified this past year, yes. 10 Q. Did you recertify a couple of days ago? 11 A. I've done -- I don't remember when -- yeah, 12 I guess I probably haven't updated this. I probably 13 need to update this. 14 Q. Okay. 15 A. Thank you. 16 Q. But you would have recertified a couple of 17 days before this deposition; right? 18 A. No. I recertified last year. 19 I think that there was -- because of COVID, 20 they delayed the year in which you had to recertify. 21 So they -- there was a grace period, and I did it 22 last year. 23 Q. Okay. You are not board certified in child 24 or adolescent psychiatry; correct? 25 A. That is correct.</p>	<p style="text-align: right;">Page 153</p> <p>1 A. Funding began in February 2023. But it's 2 been greatly delayed because of personnel changes, 3 not in my department, but over in the Human Centered 4 Artificial Intelligence side of things. 5 Q. And when did you start work in this case? 6 A. I started work February of 2023. 7 Q. Same -- same month you started your work 8 for this grant; right? 9 A. The work on this grant hasn't really begun. 10 We were -- we got the grant on February 2023, but 11 we've really not begun this particular project. 12 Q. What's the objective? 13 A. The objective was to better understand the 14 addictive design elements of various forms of 15 digital media. 16 Q. You understand that documents produced in 17 this case that you've reviewed are confidential; 18 right? 19 A. Yes, I do. 20 Q. How will you be able to separate what you 21 learn in this case that's confidential from your 22 work in connection with this project? 23 A. Well, your question suggests and implies 24 that what I've learned from confidential documents 25 would help me understand the addictive design</p>

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<p style="text-align: right;">Page 154</p> <p>1 elements. So I appreciate that question. 2 I will have no problem differentiating 3 that. 4 Q. Let's go to your peer-reviewed information. 5 I think it's page 14, which I think is LEMBKE -22 on 6 the bottom. 7 Your book Dopamine Nation was not peer 8 reviewed; correct? 9 A. That is correct. 10 Q. The peer reviewed -- you then follow a 11 category called "Peer-Reviewed Online Stanford CME 12 Courses." 13 Do you see that? 14 A. Yes. 15 Q. None of those courses are specific to 16 social media; right? 17 A. That is correct. 18 Q. You then have something saying -- category 19 called "Peer-Reviewed Original Research Articles." 20 A. Yes. 21 Q. Do you see that? 22 A. Yes. 23 Q. None of your peer-reviewed original 24 research articles focus on social or digital media; 25 correct?</p>	<p style="text-align: right;">Page 156</p> <p>1 Q. You have not generated any peer-reviewed 2 scholarship that has analyzed the effect of social 3 media on adolescent mental health; correct? 4 A. I think that's correct, yes. 5 Q. You have not generated any peer-reviewed 6 scholarship that analyzes the effect of social media 7 on anyone; correct? 8 A. That is correct. 9 Q. Have you been involved in any longitudinal 10 study or experimental study that's attempted to 11 assess mental health outcomes from social media use? 12 A. I'm currently at the beginning stages of a 13 study in our recovery clinic, but it's just getting 14 underway. We're still getting IRB approval. 15 (Stenographer interrupted for clarification 16 of the record.) 17 BY MR. ERCOLE: 18 Q. You haven't started that study yet; 19 correct? 20 A. No. 21 Q. You also list on page, I think it's 41 a 22 number of media appearances that you've done from 23 2015 to the present. 24 Do you see that? 25 A. Yes. This is an incomplete list, just</p>
<p style="text-align: right;">Page 155</p> <p>1 A. That is incorrect. 2 Q. Okay. Which one does? 3 A. So if you go to page -- page 18, No. 38, 4 this is a study that we did looking at social media 5 platforms as a way to monitor the opioid crisis, 6 looking specifically at which social media platforms 7 could be surveilled in order to see the harms caused 8 by opioids. 9 Q. Okay. None of your peer-reviewed original 10 research articles focused on addiction to social or 11 digital media; correct? 12 A. That is correct. 13 Q. None of your -- and if you go to -- like, 14 there's something that says below that 15 "Peer-Reviewed Perspectives, Case Reports, and 16 Reviews." 17 Do you see that? 18 A. Yes, I do. 19 Q. None of your Peer-Reviewed Perspectives, 20 Case Reports, and Reviews have focused on social or 21 digital media; correct? 22 A. Correct. 23 Q. None of your peer-reviewed book chapters 24 have focused on social or digital media; correct? 25 A. Correct.</p>	<p style="text-align: right;">Page 157</p> <p>1 because I stopped tracking. 2 Q. So many media appearances you couldn't 3 track them? 4 A. Yes. 5 MS. McNABB: Objection. Argumentative. 6 BY MR. ERCOLE: 7 Q. There are -- were some of these 8 appearances, these media appearances, coordinated as 9 part of a media tour to promote your book 10 Dopamine Nation? 11 A. Some of them, yes. 12 Q. Did -- as part of that media tour, did you 13 go on podcasts to talk about your book? 14 A. That was mostly organic, people reaching 15 out to me directly, not coordinated by my publisher. 16 Q. Are you aware that many, if not all, of 17 your video podcast appearances were uploaded to and 18 through YouTube? 19 A. Yes. 20 Q. Did you do that? 21 A. No. 22 Q. Did you give them permission to do that? 23 A. That's -- yes. 24 Q. Was -- did YouTube play a role in your 25 ability to promote your book?</p>

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<p style="text-align: right;">Page 158</p> <p>1 A. Yes.</p> <p>2 Q. Did you put any warning on the podcasts,</p> <p>3 that watching them could be addictive?</p> <p>4 A. No.</p> <p>5 Q. Do you think you should ask for those</p> <p>6 videos to be pulled down from YouTube?</p> <p>7 A. No. Because, again, it's not really the</p> <p>8 content. It's the medium itself. And we're talking</p> <p>9 about kids, not adults.</p> <p>10 Q. Kids can't watch your podcast?</p> <p>11 A. I don't -- I'm not saying that. But I'm</p> <p>12 saying in general, when we think about the harms of</p> <p>13 YouTube, I think we need to focus specifically on</p> <p>14 the vulnerable subset, which is kids and teens.</p> <p>15 Q. Do you think social media should be banned?</p> <p>16 A. No.</p> <p>17 Q. Do you think social media should be banned</p> <p>18 for children under -- strike that.</p> <p>19 Do you think social media should be banned</p> <p>20 for individuals under 18?</p> <p>21 A. No, not necessarily. I mean, I think we</p> <p>22 need to look at each platform individually.</p> <p>23 Q. Do you think any platforms -- strike that.</p> <p>24 Do you think any of the defendants'</p> <p>25 platforms should be banned for individuals under 18?</p>	<p style="text-align: right;">Page 160</p> <p>1 minors between the ages of, I guess, 13 and 16 --</p> <p>2 A. Yeah.</p> <p>3 Q. -- is that fair?</p> <p>4 MS. McNABB: Objection. Scope.</p> <p>5 BY MR. ERCOLE:</p> <p>6 Q. Do you hold yourself out as an expert in</p> <p>7 digital technology?</p> <p>8 A. It depends what you mean by "expert in</p> <p>9 digital technology."</p> <p>10 I do hold myself out as an expert in the</p> <p>11 phenomenology of social media use, social media</p> <p>12 addiction, problematic use, and other mental health</p> <p>13 and physical health harms related to social media</p> <p>14 use.</p> <p>15 Q. How about, do you hold yourself or consider</p> <p>16 yourself to be an expert in product design?</p> <p>17 A. I do when it comes to social media because</p> <p>18 I have expertise in the specific design elements</p> <p>19 that go into making the medium addictive.</p> <p>20 Q. What expertise do you have into the design</p> <p>21 elements of social media?</p> <p>22 A. I've been studying them for going on</p> <p>23 15 years. And as I talk about in my report, there</p> <p>24 are many different design features that contribute</p> <p>25 to the addictive nature of defendants' platforms.</p>
<p style="text-align: right;">Page 159</p> <p>1 A. What do you mean by "banned"? You mean</p> <p>2 them not allowed to access it?</p> <p>3 Q. Yes.</p> <p>4 A. Yes, I -- but I wouldn't put the age</p> <p>5 necessarily at 18.</p> <p>6 Q. Where would you put the age?</p> <p>7 A. I'm not sure. I would certainly put it at</p> <p>8 least at 13 and possibly at 16.</p> <p>9 Q. And for which platforms would you do that?</p> <p>10 A. For all of the defendants' platforms,</p> <p>11 certainly.</p> <p>12 Q. So for all of the defendants' platforms,</p> <p>13 you -- your view would be that no one under 16</p> <p>14 should be able to access them; is that fair?</p> <p>15 A. I didn't say that. I said I'm considering</p> <p>16 16, but certainly 13.</p> <p>17 Q. Okay. So you're considering 16, but you</p> <p>18 haven't formed a view on whether or not someone</p> <p>19 who's under 16 should be able to access the</p> <p>20 defendants' platforms?</p> <p>21 A. I have formed a view that kids under the</p> <p>22 age of 13, that they probably shouldn't be able to</p> <p>23 access the platforms because the harms outweigh the</p> <p>24 goods.</p> <p>25 Q. And you're still making that decision for</p>	<p style="text-align: right;">Page 161</p> <p>1 Q. Do you have -- do you hold yourself out as</p> <p>2 an expert in the design of any other product beyond</p> <p>3 social media?</p> <p>4 A. I'm an expert in the design of various</p> <p>5 opioids and other drugs.</p> <p>6 Q. So, you know, about any other product</p> <p>7 beyond opioids or social media platforms?</p> <p>8 A. No. I -- I guess maybe I would say digital</p> <p>9 media. I would expand it to digital media</p> <p>10 platforms.</p> <p>11 Q. You're an expert on the design of them?</p> <p>12 A. Again, it depends what you mean by</p> <p>13 "design."</p> <p>14 I do feel I have expertise specifically in</p> <p>15 what makes a platform addictive or not.</p> <p>16 Q. Do you have expertise in algorithms?</p> <p>17 A. Only to the extent that I believe that the</p> <p>18 algorithms contribute to the addictive design of</p> <p>19 defendants' platforms.</p> <p>20 Q. Do you -- are you an expert in how</p> <p>21 algorithms are designed and created?</p> <p>22 A. No.</p> <p>23 Q. Do you have any engineering background or</p> <p>24 training or specialization?</p> <p>25 A. No.</p>

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<p style="text-align: right;">Page 162</p> <p>1 Q. Do you hold yourself out as an expert as to 2 what designs -- strike that. 3 Do you hold yourself out as an expert for 4 what platform designs may be feasible or not 5 feasible? 6 A. I don't understand the question. 7 Q. Sure. 8 Do you understand that when you're 9 designing a platform, some -- some features and 10 designs may be feasible and some features may not be 11 feasible? 12 A. I understand that. 13 Q. Do you hold yourself out as an expert in 14 that space? 15 A. No. 16 Q. Do you hold yourself out as an expert as to 17 the features of social media platforms? 18 A. Yes. 19 Q. And that's based upon you studying it? 20 A. Yes. 21 Q. And you hold yourself out as an expert as 22 to the effects of social media usage; is that right? 23 A. Yes. 24 Q. Do you hold yourself out as an expert in 25 sleep disorders?</p>	<p style="text-align: right;">Page 164</p> <p>1 You didn't -- you did not do a 2 Bradford Hill analysis in your JCCP report; correct? 3 A. That is correct. 4 Q. You are not offering any opinions in this 5 case on what warnings, if any, should accompany the 6 use of social -- a social media platform; right? 7 A. No, that's incorrect. 8 Q. You are offering an opinion on warnings in 9 this case? 10 A. Yes. 11 Q. Okay. Well, where in your report do you 12 offer any opinion on -- on what warnings, if any, 13 should accompany social media platforms? 14 A. Well, I don't discuss that in my report, 15 but I have opinions on warnings. I thought that was 16 your question. 17 Q. You're not -- my question was more, in this 18 particular case, are you offering an opinion on 19 that? 20 A. I mean, if I'm asked my opinion on that, 21 I'm happy to discuss my opinion. 22 Q. In your report itself, you don't offer any 23 opinions on that; right? 24 A. I don't believe so. I think I do reference 25 the Surgeon General's report recommending warnings</p>
<p style="text-align: right;">Page 163</p> <p>1 A. Yes. 2 Q. Eating disorders? 3 A. Yes. 4 Q. Body dysmorphia? 5 A. Yes. 6 Q. Self-harm? 7 A. Yes. 8 Q. ADHD? 9 A. Yes. 10 Q. Autism? 11 A. Yes. 12 Q. Bipolar disorder? 13 A. Yes. 14 Q. Do you know what a -- Dr. Lembke, do you 15 know what a Bradford Hill analysis is? 16 A. Yes. 17 Q. What is it? 18 A. It's a way of looking at causality. It's a 19 method for assessing causality. 20 Q. And how do you do that? 21 A. There are multiple criteria within 22 Bradford Hill that you evaluate to determine whether 23 the relationship between exposure to a toxin is 24 causing a given disease process. 25 Q. Did you -- strike that.</p>	<p style="text-align: right;">Page 165</p> <p>1 on social media for kids, and I agree with that 2 recommendation. But I don't think I explicitly say 3 in my report that I agree with that recommendation. 4 But I might. If you give me a moment, I'll take a 5 look. 6 Actually, I think it will take me too much 7 time to find it now. I'm happy to go do that at the 8 break. 9 Q. You're not giving an opinion on whether or 10 not defendants' social media platforms did or did 11 not meet industry standards; right? 12 A. That's correct. 13 Q. You're not giving any opinion on whether 14 there's some safer or alternative design to 15 defendants' platforms; right? 16 A. That's incorrect. 17 Q. What safer or alternative design opinion 18 are you giving in this case? 19 A. I specifically address the design elements 20 that make defendants' platforms addictive. And so 21 the natural conclusion from there is that a safer 22 design would eliminate or greatly reduce those 23 elements. 24 Q. So what safer design are you advocating 25 for?</p>

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<p style="text-align: right;">Page 166</p> <p>1 A. Well, let's start with access. I think it 2 probably best if we go to my report on this section. 3 Again, to clarify, I don't specifically 4 have a section where I'm talking about "These are 5 the safer design elements that I recommend." 6 Q. Well, how about this: Are you -- is there 7 a particular design that you articulate in your 8 report that defendants should be using going 9 forward? 10 A. I don't specifically address that in the 11 report. I have opinions about that. I think my 12 report strongly implies what my recommendations 13 would be. I'm happy to answer questions about 14 those. But it's not in my report. 15 MR. ERCOLE: Okay. Do you -- it's 12 -- 16 12:15. Do you want to stop and take a break, or 17 would you prefer to keep going? 18 THE WITNESS: I'm happy to keep going. 19 (Discussion off the stenographic record.) 20 BY MR. ERCOLE: 21 Q. Are you familiar with the Diagnostic and 22 Statistical Manual published by the American 23 Psychiatric Association? 24 A. Yes. 25 Q. And that currently is, I guess,</p>	<p style="text-align: right;">Page 168</p> <p>1 A. M-hm. 2 Q. Do you see that? 3 What does "TR" mean? 4 A. Text revision. 5 Q. Okay. And so the DSM-5 was published in 6 2013, I think; is that right? 7 A. I believe so, yes. 8 Q. And then it was updated at various times 9 since then; correct? 10 A. I think just once since then in 2021 or 11 2022 -- March 2022. 12 Q. And can you read -- this is the -- what the 13 American Psychiatric Association says. Can you read 14 what the first sentence says? 15 A. (As read): 16 "The Diagnostic and Statistical 17 Manual of Mental Disorders is the 18 authoritative guide to the diagnosis of 19 mental disorders for health care 20 professionals around the world." 21 Q. And you disagree with that? 22 A. It is one of, you know, several documents 23 that we use. But I think most psychiatrists take 24 the DSM with a grain of salt, knowing that it's 25 highly flawed, that it's liable to be influenced by</p>
<p style="text-align: right;">Page 167</p> <p>1 colloquially referred to as "DSM-5"; is that right? 2 A. Yes. 3 Q. Okay. And is DSM-5 the authoritative guide 4 to the diagnosis of mental disorders for healthcare 5 professionals around the world? 6 A. No. 7 Q. Are you a member of the American 8 Psychiatric Association? 9 A. I think so. I might have let my most 10 recent membership lapse, but I have been a member 11 for many years. 12 MR. ERCOLE: Sorry. 13 THE STENOGRAPHER: Is this an exhibit? 14 MR. ERCOLE: Yeah, let's mark this as 15 Exhibit -- 16 THE STENOGRAPHER: Six. 17 MR. ERCOLE: -- 6. 18 (Marked for identification purposes, 19 Lembke Exhibit 6.) 20 BY MR. ERCOLE: 21 Q. So this is a document from the American 22 Psychiatric Association, Dr. Lembke. 23 Do you see that? 24 A. Yeah, I do. 25 Q. And it refers to "DSM-5-TR."</p>	<p style="text-align: right;">Page 169</p> <p>1 industry, that at one point one of the diagnoses was 2 homosexuality. That's no longer included. 3 So, you know, it's sort of the best we 4 have, but it's by no means the end all and be all of 5 how to diagnose mental disorders. 6 Q. It goes -- this is the American 7 Psychiatric Association. It also goes on to say 8 (as read): 9 "Clinicians use DSM to accurately and 10 consistently diagnose disorders affecting 11 mood, personality, identity, cognition, 12 and more." 13 Do you see that? 14 A. Yes, I see that. 15 Q. Is that accurate in your view? 16 A. I mean, I think it's a common language that 17 we use. Whether or not, you know, what the DSM is 18 getting at is the most accurate representation of 19 what's happening in terms of mental health in a 20 given time and place, I think -- again, it's a 21 highly flawed document but sort of what we are 22 using. 23 And if you were going to interview a 24 psychiatrist and they were going to be totally 25 honest with you about that, they would admit that</p>

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<p style="text-align: right;">Page 170</p> <p>1 that is true.</p> <p>2 Q. And you -- do you use the DSM-5 in your</p> <p>3 practice?</p> <p>4 A. Yes, we do. It's not the only thing we</p> <p>5 use, but we -- we do use it.</p> <p>6 Q. DSM-5 and its various updates do not use</p> <p>7 the term "addiction" at all; right?</p> <p>8 A. That is correct.</p> <p>9 Q. Instead, they use the term "substance use</p> <p>10 disorder" or "use disorder"; right?</p> <p>11 A. Correct.</p> <p>12 Q. And you use -- at least before this</p> <p>13 litigation, you used the word "addiction" as</p> <p>14 synonymous with the DSM's language for substance use</p> <p>15 disorder; right?</p> <p>16 A. Yes. I still do.</p> <p>17 Q. And the DSM-5 has nothing in it that</p> <p>18 officially recognizes a condition called "social</p> <p>19 media addiction" or "use disorder"; right?</p> <p>20 A. That's correct.</p> <p>21 MR. ERCOLE: Sorry. Just give me one</p> <p>22 second.</p> <p>23 THE WITNESS: It's okay. Take your time.</p> <p>24 BY MR. ERCOLE:</p> <p>25 Q. You've -- in expert reports that you've</p>	<p style="text-align: right;">Page 172</p> <p>1 "Addiction is a chronic, relapsing</p> <p>2 and remitting disease with a behavioral</p> <p>3 component characterized by neuroadaptive</p> <p>4 brain changes resulting from exposure to</p> <p>5 addictive drugs."</p> <p>6 Correct?</p> <p>7 A. Yes.</p> <p>8 Q. Okay. There's nothing in there about</p> <p>9 exposure to particular behavior or anything like</p> <p>10 that; right? You refer to addictive drugs?</p> <p>11 A. Yes. But that's because this was pursuant</p> <p>12 to opioid litigation.</p> <p>13 Q. Okay.</p> <p>14 A. It wasn't relevant to this case.</p> <p>15 Q. But you were trying to give a complete</p> <p>16 definition of what addiction is; right?</p> <p>17 A. I was giving an almost identical definition</p> <p>18 to what I have in the social media litigation</p> <p>19 report. But because this wasn't pertaining to</p> <p>20 behaviors, which we know can be addictive, I didn't</p> <p>21 include it here.</p> <p>22 But I include reference to DSM as a source,</p> <p>23 which includes gambling disorder and Internet gaming</p> <p>24 provisionally. I included reference to the ASAM</p> <p>25 definition, which makes it very clear that you can</p>
<p style="text-align: right;">Page 171</p> <p>1 submitted, Dr. Lembke, you've defined "addiction" in</p> <p>2 a way that does not include any behavioral</p> <p>3 addiction; right?</p> <p>4 A. Can you show me specifically what you're</p> <p>5 referring to?</p> <p>6 Q. Sure.</p> <p>7 Let's do this: Let's mark this as</p> <p>8 Exhibit 7.</p> <p>9 (Marked for identification purposes,</p> <p>10 Lembke Exhibit 7.)</p> <p>11 BY MR. ERCOLE:</p> <p>12 Q. Dr. Lembke, is this a declaration that you</p> <p>13 submitted in one of the opioid litigation cases?</p> <p>14 A. It looks like it, yes.</p> <p>15 Q. Okay. And you would have signed this</p> <p>16 document at the end; is that right?</p> <p>17 A. Yes, I did.</p> <p>18 Q. And it was dated April 24th, 2022; right?</p> <p>19 If you look at the -- the last page.</p> <p>20 A. Ah. Yes.</p> <p>21 Q. And this was in connection with this report</p> <p>22 that you gave a definition of -- of "addiction" in</p> <p>23 this litigation case; right?</p> <p>24 A. Yes, I did.</p> <p>25 Q. Okay. And Opinion 1 states (as read):</p>	<p style="text-align: right;">Page 173</p> <p>1 get addicted to behaviors as well as to substances.</p> <p>2 So my definition of addiction hasn't</p> <p>3 changed between the two reports.</p> <p>4 Q. So your testimony, just to be clear, is</p> <p>5 that your definition of addiction as stated here is</p> <p>6 the same as your definition of addiction in the</p> <p>7 report that you've offered in this case?</p> <p>8 A. Substantively they're almost identical,</p> <p>9 yes.</p> <p>10 Q. Well, one allows for the concept of a</p> <p>11 behavioral addiction, this case. But the one that</p> <p>12 you submitted in the opioid litigation doesn't</p> <p>13 address that at all.</p> <p>14 MS. McNABB: Objection. Misstates document</p> <p>15 and prior testimony.</p> <p>16 THE WITNESS: Is there a question?</p> <p>17 BY MR. ERCOLE:</p> <p>18 Q. Yeah.</p> <p>19 I mean, isn't that correct? Is there --</p> <p>20 where -- so let's turn to paragraph 2. (As read):</p> <p>21 "Addiction is the continued use of a</p> <p>22 substance despite harm to self and others</p> <p>23 and a desire to quit or cut back."</p> <p>24 Do you see that?</p> <p>25 A. Yes, I do.</p>

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<p style="text-align: right;">Page 174</p> <p>1 Q. Okay. And there's -- here you're referring</p> <p>2 to continued use of a substance; right?</p> <p>3 A. Because this was pursuant to opioid</p> <p>4 litigation. So the behavioral addictions were not</p> <p>5 relevant to this case.</p> <p>6 Q. And in the report that you're giving here</p> <p>7 in this particular case, you've -- your definition</p> <p>8 is (as read):</p> <p>9 "Addiction is a chronic, relapsing</p> <p>10 and remitting brain disease, as evidenced</p> <p>11 by continued, compulsive use of a</p> <p>12 substance or engagement in a behavior,</p> <p>13 despite harmful consequences."</p> <p>14 Right?</p> <p>15 A. Yes.</p> <p>16 Q. There's no reference "or engagement in a</p> <p>17 behavior" whatsoever in the definition of</p> <p>18 "addiction" you gave throughout the opioid</p> <p>19 litigation; right?</p> <p>20 MS. McNABB: Objection. Misstates prior --</p> <p>21 (Simultaneous speakers - unclear.)</p> <p>22 THE WITNESS: Again, because it wasn't</p> <p>23 relevant.</p> <p>24 If you had -- if you had asked me at the</p> <p>25 time that I wrote the opioid litigation, do I</p>	<p style="text-align: right;">Page 176</p> <p>1 work of over 200 subject-matter experts?</p> <p>2 A. I don't know.</p> <p>3 Q. If the American Psychiatric Association was</p> <p>4 recognizing that over 200 subject-matter experts</p> <p>5 were involved in the development of DSM-5-TR per the</p> <p>6 exhibit we just looked at, any reason to dispute</p> <p>7 that?</p> <p>8 A. I'm sorry. Where is that 200</p> <p>9 subject-matter experts? I'm not seeing that.</p> <p>10 Q. It says, "The development of DSM-5-TR."</p> <p>11 It's the second sentence underneath that category.</p> <p>12 A. Oh, yes. I see that now.</p> <p>13 Q. Any reason to dispute that?</p> <p>14 A. No.</p> <p>15 Q. And even after 200 subject-matter experts</p> <p>16 were evaluating these issues in connection with that</p> <p>17 publication, there was no recognition of social</p> <p>18 media addiction or social media use disorder; right?</p> <p>19 A. So just to be clear, I highly doubt that</p> <p>20 the 200 subject-matter experts were debating the</p> <p>21 inclusion or exclusion of social media use disorder.</p> <p>22 Typically when the DSM is being revised, they will</p> <p>23 break off into work groups that have subject-matter</p> <p>24 expertise.</p> <p>25 So it wouldn't be that 200 people were</p>
<p style="text-align: right;">Page 175</p> <p>1 believe people can get addicted to behaviors? I</p> <p>2 certainly would have said, yes.</p> <p>3 So by admitting it here, I was not changing</p> <p>4 my definition. It was just a different emphasis</p> <p>5 because this is a different case.</p> <p>6 BY MR. ERCOLE:</p> <p>7 Q. And you go on in that paragraph to</p> <p>8 reference the DSM-5; right?</p> <p>9 A. Yes, I do. Yes.</p> <p>10 Q. And, again, DSM-5 contains no reference to</p> <p>11 social media addiction or social media use disorder;</p> <p>12 right?</p> <p>13 MS. McNABB: Objection. Asked and</p> <p>14 answered.</p> <p>15 BY MR. ERCOLE:</p> <p>16 Q. Correct?</p> <p>17 A. Correct.</p> <p>18 Q. Okay. In your report you attribute that to</p> <p>19 the fact that the DSM-5 was issued in 2013; right?</p> <p>20 A. I don't think that's a fair</p> <p>21 characterization of why it's not included.</p> <p>22 Q. DSM-5-TR was published in March of 2022;</p> <p>23 right?</p> <p>24 A. Yes.</p> <p>25 Q. Okay. Do you know, did that involve the</p>	<p style="text-align: right;">Page 177</p> <p>1 thinking about social media. It would be that --</p> <p>2 the subset of individuals who might have been</p> <p>3 thinking about social media.</p> <p>4 But I would also say that the text revision</p> <p>5 is just that, primarily an opportunity to revise the</p> <p>6 2013 edition, although there can be space to</p> <p>7 introduce new diagnoses. Typically it's a time to</p> <p>8 revise the existing text.</p> <p>9 Q. Well, there was another update in September</p> <p>10 of 2022; right?</p> <p>11 A. There may have been. And I'm aware of one</p> <p>12 text revision in 2022 globally.</p> <p>13 But the point -- my point still stands that</p> <p>14 the text revision is primarily for clarifying and</p> <p>15 updating the existing text.</p> <p>16 Q. There was another update of the DSM-5-TR in</p> <p>17 September of 2023, too; right?</p> <p>18 Do you know one way or the other?</p> <p>19 A. I don't know.</p> <p>20 Q. Do you know whether there was another</p> <p>21 update in September of 2024?</p> <p>22 A. I don't know.</p> <p>23 Q. Do you know whether in connection with all</p> <p>24 of those updates there were new diagnoses that were</p> <p>25 added?</p>

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<p style="text-align: right;">Page 178</p> <p>1 MS. McNABB: Objection. Foundation. 2 THE WITNESS: I believe that there were 3 some new diagnoses added, yes. 4 BY MR. ERCOLE: 5 Q. And one was considered prolonged -- one was 6 prolonged grief disorder was added; right? 7 A. Yes, I am aware of that. 8 Q. Social media addiction, social media use 9 disorder was never added as a recognized disorder by 10 the DSM-5 and the experts investigating that issue; 11 right? 12 A. That is true. But there's been a surge in 13 research and evidence since that date. 14 Q. Since September of 2024? 15 A. Well, certainly since 2022. 16 Q. Have you submitted a proposal to make 17 changes to the DSM-5? 18 A. No. 19 Q. Could you do that? 20 A. There's certainly a process to petition. 21 Q. Does the international classification of 22 diseases by the World Health Organization recognize 23 a condition called "social media addiction"? 24 A. Not yet. 25 Q. Or it also doesn't recognize any condition</p>	<p style="text-align: right;">Page 180</p> <p>1 A. Yeah. 2 Q. Based -- sorry. Based upon your 3 interpretation of the defendants' data; is that 4 correct? 5 A. Yes. 6 Q. Okay. Any other source that you have for 7 what percentage of daily social media users are 8 addicted to social media, in your view? 9 A. Yes. If we look at the WHO study that was 10 done, the WHO study found that -- 11 Q. I hate to interrupt you -- 12 A. Oh, sorry. 13 Q. -- but what page are you on? 14 A. This is page 10 of my report. 15 So the WHO study using the Social Media 16 Disorder Scale found that problematic social media 17 use, a/k/a addictive social media or social media 18 addiction, increased from 7 percent in 2018 to 19 11 percent in 2022. Those are just two potential 20 sources. 21 Q. So I think the numbers you've given are 22 3 percent, 7 percent, 11 percent, or 50 percent; 23 right? 24 A. It's a wide range, clearly. 25 Q. Any other sources for the percent -- in</p>
<p style="text-align: right;">Page 179</p> <p>1 called "social media use disorder"; right? 2 A. Not yet. 3 Q. Are you aware of any colleagues who have 4 submitted a proposal to the American Psychiatric 5 Association to change the DSM-5 to include social 6 media use disorder or social media addiction? 7 A. No. 8 MR. ERCOLE: Why don't we pause. Why don't 9 we take a break now. 10 THE VIDEOGRAPHER: The time is 12:28. 11 We're off the record. 12 (Recess taken from 12:28 to 1:04.) 13 THE VIDEOGRAPHER: The time is 1:04. We're 14 back on the record. 15 BY MR. ERCOLE: 16 Q. Good afternoon, Dr. Lembke. 17 Dr. Lembke, what percentage in your view -- 18 strike that. 19 In your view, what percentage of daily 20 social media users are addicted to social media? 21 A. I don't know. I mean, if we go by 22 defendants' data, you know, it's somewhere between 3 23 and 50 percent. 24 Q. That's based upon the defendants' data; is 25 that correct?</p>	<p style="text-align: right;">Page 181</p> <p>1 your view, the percentage of daily users of social 2 media who are allegedly -- (inaudible) 3 (Stenographer interrupted for clarification 4 of the record.) 5 BY MR. ERCOLE: 6 Q. Any other sources in your view of -- that 7 would reflect the percentage of daily users of 8 social media who are allegedly addicted to social 9 media? 10 A. So TikTok internal documents found that 11 approximately 7 percent of active minors at 12 nighttime were excessive users. Excessive users 13 isn't exactly the same thing as addicted users, but 14 it's certainly a strong indicator of risk for 15 addictive use. 16 And 4.8 percent of active minors at daytime 17 are excessive users, which, as I say in my report, 18 translates to 900,000 teens using TikTok excessively 19 at nighttime and 500,000 during the day. 20 Q. So apart from the company documents you're 21 looking at and the WHO study you referenced, any 22 other sources that inform your understanding of this 23 percentage question? 24 A. I mean, there are other documents I 25 reviewed that address this. I'm not specifically</p>

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<p style="text-align: right;">Page 182</p> <p>1 recalling them now. But in general, my reading of 2 the literature is that the amount is a fairly wide 3 range depending upon the source, but it's certainly 4 not an insignificant percentage. 5 Q. The WHO study that you referenced did not 6 look at any usage in the United States; right? 7 A. WHO study ... 8 I'm not remembering whether or not that 9 included the United States. They relied on the 10 Social Media Disorder Scale. 11 Q. Well, just the title of the article itself 12 says, right (as read): 13 "Focus on adolescent social media use 14 and gaming in Europe, Central Asia, and 15 Canada"? 16 A. Okay. 17 I don't recall if they included the 18 United States. 19 Q. You referenced a lot of different terms in 20 your answer. I think "excessive use." You used -- 21 you also referenced "problematic use." And then you 22 referenced "addiction." 23 Do you recall just doing that now -- 24 A. Yes. 25 Q. -- in your answer?</p>	<p style="text-align: right;">Page 184</p> <p>1 into these terms. 2 So I think you -- you referenced -- and 3 tell me if I get this wrong. I want to make sure 4 I'm not misquoting you -- but, like, excessive use, 5 problematic use, and addiction, three separate 6 concepts; correct? 7 A. No, they're not separate. They're related. 8 And different sources will use these terms in 9 different ways, so it really depends on what source 10 we're looking at. 11 So when you're talking about problematic 12 use, specifically Meta defines problematic use. And 13 I reference that on page 25 of my report. And their 14 definition of problematic use has significant 15 overlap with the diagnostic criteria for social 16 media addiction or social media use disorder. It's 17 not identical, but it's quite similar. 18 Q. So the -- so problematic use, though, you 19 said is not identical but similar to how you define 20 social media addiction; right? 21 A. The way that I use "problematic use" is 22 more similar than not to how I define social media 23 addiction. But other sources may use it differently 24 in different contexts. 25 Q. Okay. And what's the difference between</p>
<p style="text-align: right;">Page 183</p> <p>1 A. Yes. 2 Q. So what's the difference between excessive 3 use and problematic use? 4 A. Well, first of all, all of these different 5 terms refer to a range of harms that can happen. I 6 think it's important to recognize that even if an 7 individual is not meeting threshold criteria for 8 addiction, they still may be engaging in a way that 9 causes harms. 10 Excessive use is based on time alone, 11 whereas problematic use is based on out-of-control 12 use that leads to consequences. 13 So Meta actually in their internal 14 documents provides a -- the nice definition of 15 "problematic use"; that is to say, it must include 16 perceived lack of control over social media use, 17 both control over time spent and control over 18 experiences, that are then perceived to contribute 19 to negative life impacts. 20 That's a pretty good definition of 21 addiction, social media addiction. It's not 22 identical to the definition that I'm using, but 23 it's -- it's a pretty strong definition. 24 Q. So I want to just be, like, very specific 25 and we can boil down -- like -- like, drill down</p>	<p style="text-align: right;">Page 185</p> <p>1 how Meta defines "problematic use" in at least some 2 of the documents you looked at and how you define 3 "addiction"? 4 A. What is the difference? 5 Q. Yeah. 6 A. The main difference, I would say, is that 7 if you look at the four C's out of control use, 8 compulsive use, craving, continued use despite 9 consequences, plus tolerance and withdrawal; Meta's 10 definition of "problematic use" encompasses loss of 11 control over time spent, loss of agency, which is 12 typical in addictive disorders, as well as the 13 consequences that result from that. 14 But the broader definition of addiction, 15 which maps onto the DSM, also involves craving. It 16 also involves compulsions. It involves tolerance. It 17 involves withdrawal. 18 So I would say that there are more symptoms 19 included in the diagnostic criteria for social media 20 addiction than are included in problematic use. But 21 I think their definition of problematic use gets at 22 the heart of addiction and the heart of really any 23 diagnosis for any mental health disorder, which is 24 that it has to cause harm to the individual's life. 25 Q. And we'll talk about that in a -- in a</p>

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<p style="text-align: right;">Page 186</p> <p>1 little bit. But to go back to, then, the excessive 2 use point -- 3 A. Yeah. 4 Q. -- what is the amount of use on a platform 5 that takes it from non-excessive to excessive? 6 A. It depends on the source. People define it 7 in different ways. Sometimes in the literature 8 people define it as four hours a day, five hours a 9 day. Some of the sources, especially the internal 10 documents, talk openly about binge use. That's 11 where there's heavy consumption in one discrete time 12 period. 13 When we talk about "binge" in the field of 14 addiction, we're usually talking about within one 15 24-hour period. 16 In this particular TikTok document, they 17 have their own definition for excessive use. 18 Q. What's your -- putting aside what TikTok 19 has to say, do you have a definition of "excessive 20 use" for social media? 21 A. I don't have a specific quantity of time 22 because it's not a diagnosis that's based on time. 23 Time is an important indicator. The more time, the 24 more likely they are to meet criteria for addiction. 25 But time alone is not how the diagnosis is made.</p>	<p style="text-align: right;">Page 188</p> <p>1 correct? 2 A. Yes. 3 Q. If I want to go somewhere and plug in 4 "social media addiction" to get that criteria that 5 you identify in your report, where specifically do I 6 go to understand the criteria for social media 7 addiction? 8 MS. McNABB: Objection. Asked and 9 answered. 10 THE WITNESS: I do think I -- I answered 11 it. If you want me to be a little bit more specific 12 about the medical literature, you can go to the 13 various validated social media disorder scales. 14 BY MR. ERCOLE: 15 Q. So the scales lay out the specific criteria 16 for when someone meets the definition of social 17 media addiction and when they don't? 18 A. Yes. Those -- and those criteria are very 19 similar to the criteria in the DSM, the criteria for 20 digital gaming disorder at the ICD, a coding for 21 what ASAM describes about the nature of behavioral 22 addictions. 23 Q. Right. 24 I'm not asking about behavioral addictions 25 in general. I'm asking specifically about social</p>
<p style="text-align: right;">Page 187</p> <p>1 Q. But as a -- someone who treats people who 2 have addiction, do you have a -- do you have a 3 baseline amount of time that you -- you find to be 4 excessive versus non-excessive on social media? 5 A. No. 6 Q. For your criteria of social media 7 addiction, where can I go, what source can I go to, 8 that uses your specific criteria and says "Social 9 media addiction are these diagnostic criteria"? 10 A. You can go to the medical literature. You 11 can go to -- you can get more broad descriptions at 12 the American Psychiatric Association. You can go to 13 ASAM's definition. You can -- those are three good 14 sources right there. 15 Q. So you said -- 16 A. Even the DSM is a reasonable source because 17 the DSM criteria for gambling disorder or substance 18 use disorder or Internet gaming are basically more 19 similar than not and also are similar to the 20 diagnostic criteria for social media addiction. 21 Q. Right. But we've talked about the DSM a 22 bit already. 23 If I'm looking for -- like, here you've 24 spelled out the criteria that you believe meets the 25 definition of social media addiction in your report;</p>	<p style="text-align: right;">Page 189</p> <p>1 media addiction and the defining criteria for that 2 specific diagnosis. 3 That -- I can't go to the DSM and look at a 4 specific diagnosis for social media addiction; 5 right? 6 A. What I'm trying to tell you is that the 7 diagnostic criteria for a substance use disorder or 8 gambling disorder or social media addiction or 9 social media use disorder are all more similar than 10 not. We're looking at the same basic phenomenology. 11 It's just that the drug of choice is different. 12 Q. And I know that's -- that's your testimony. 13 But if I'm a practicing physician in Kansas and I 14 look at the -- go to the DSM to understand what -- 15 whether there's something called "social media 16 addiction disorder" or "social media use disorder" 17 and what the criteria are, DSM is not going to give 18 me an answer to that; right? 19 A. Well -- 20 MS. McNABB: Objection. Asked and 21 answered. 22 THE WITNESS: Yeah. 23 I mean, you could go to the DSM and replace 24 "substance use" with "social media," and you would 25 capture the phenomenon.</p>

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<p style="text-align: right;">Page 190</p> <p>1 BY MR. ERCOLE:</p> <p>2 Q. So putting aside, like, the replacing --</p> <p>3 replacing various disorders with existing disorders,</p> <p>4 where, as a practicing physician in Kansas, would I</p> <p>5 go to understand what specifically social media use</p> <p>6 disorder criteria are for -- to understand, like,</p> <p>7 whether someone has that?</p> <p>8 A. I think as a practicing physician in</p> <p>9 Kansas, you could Google the Social Media Disorder</p> <p>10 Scale, and you would have a good scale to measure</p> <p>11 that with.</p> <p>12 Q. And the Social Media Disorder Scale, do you</p> <p>13 know when that was invented?</p> <p>14 A. Take a look at my report.</p> <p>15 I don't know when it was invented. I cite</p> <p>16 to Eijnden, et al., where they have a published</p> <p>17 study showing that the scale is a valid measure for</p> <p>18 social media addiction. But I don't know if that is</p> <p>19 the origin of Social Media Disorder Scale or if it</p> <p>20 came from someone else earlier.</p> <p>21 Q. And I think you testified before, you don't</p> <p>22 use that particular scale in your practice; correct?</p> <p>23 A. I use interview questions that are very</p> <p>24 similar to that scale, but I don't pull out a piece</p> <p>25 of paper and sort of go through the checklist.</p>	<p style="text-align: right;">Page 192</p> <p>1 oversee; right?</p> <p>2 A. Yes.</p> <p>3 Q. Okay. In the adult clinic, how many</p> <p>4 doctors work there?</p> <p>5 A. We have a lot of doctors who work in that</p> <p>6 clinic, if you include trainees, on the order of 12</p> <p>7 or 13.</p> <p>8 Q. How about actual, like, non-trainee medical</p> <p>9 professionals?</p> <p>10 A. Well, our fellows are highly trained</p> <p>11 medical professionals. They all have their MDs.</p> <p>12 They've completed full residencies. It's a</p> <p>13 fellowship, so it's a very advanced subspecialty</p> <p>14 training.</p> <p>15 But in terms of supervising attendings, we</p> <p>16 have six MDs. We have a PA. We have social</p> <p>17 workers. We have PhD and PsyD psychologists.</p> <p>18 (Stenographer admonishment.)</p> <p>19 THE WITNESS: Louder?</p> <p>20 Okay.</p> <p>21 Q. And then how about in the -- the child</p> <p>22 clinic? How many doctors do you have working?</p> <p>23 A. The child clinic has one MD, one social</p> <p>24 worker, and then two trainees.</p> <p>25 Q. And in the -- in the child clinic -- which</p>
<p style="text-align: right;">Page 191</p> <p>1 Some clinicians do work that way. I -- I</p> <p>2 don't. But I ask very similar, if not identical,</p> <p>3 questions as the questions on the Social Media</p> <p>4 Disorder Scale.</p> <p>5 Q. What questions do you ask your patients</p> <p>6 with respect to social media usage?</p> <p>7 A. Again, the four Cs, tolerance, withdrawal.</p> <p>8 The Social Media Disorder Scale also adds</p> <p>9 a -- a question about deception, and I do almost</p> <p>10 always ask my patients about that too.</p> <p>11 Deception is not in the DSM, but it's</p> <p>12 well-known to be part and parcel of the disease of</p> <p>13 addiction, that is to say, lying about use. So I --</p> <p>14 (inaudible)</p> <p>15 (Stenographer interrupted for clarification</p> <p>16 of the record.)</p> <p>17 THE WITNESS: Sorry. That is to say, lying</p> <p>18 about use.</p> <p>19 THE STENOGRAPHER: Thank you.</p> <p>20 BY MR. ERCOLE:</p> <p>21 Q. And I guess my question is a little bit --</p> <p>22 so walk me through the process. Someone comes in --</p> <p>23 well, let me ask this: You mentioned there are --</p> <p>24 there are two clinics that you work at. There's an</p> <p>25 adult clinic and a -- and a child clinic that you</p>	<p style="text-align: right;">Page 193</p> <p>1 is the one that's treating adolescents; right?</p> <p>2 A. Yeah.</p> <p>3 Q. -- what questions are asked there about</p> <p>4 social media usage?</p> <p>5 A. The same -- the same questions I've already</p> <p>6 described in terms of questions about agency or</p> <p>7 control, loss of control, questions about -- excuse</p> <p>8 me -- consequences related to use. Indeed,</p> <p>9 questions about quantity and frequency, although we</p> <p>10 don't use that to make the diagnosis. Questions</p> <p>11 about tolerance, needing more potent forms over time</p> <p>12 to get the same effect. Questions about withdrawal.</p> <p>13 What happens when people try to stop using? Are</p> <p>14 they able to stop using even when they want to?</p> <p>15 Questions about deception. Are they hiding their</p> <p>16 use?</p> <p>17 Q. Is there a list of questions that exist</p> <p>18 somewhere?</p> <p>19 Because you're giving me some broad</p> <p>20 answers, but --</p> <p>21 A. Yeah.</p> <p>22 Q. -- if I'm interested in understanding the</p> <p>23 specific questions that get asked, where do I go to</p> <p>24 find that?</p> <p>25 A. Yeah. So a trained psychiatrist doesn't</p>

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<p style="text-align: right;">Page 194</p> <p>1 need a list. We know the criteria. We do this all 2 day, every day. 3 Q. And who was the name of the -- you said 4 there's one MD at the -- 5 A. M-hm. 6 Q. -- child clinic. Who is -- what's that 7 person's name? 8 A. Brad Zicherman. 9 And, by the way, he may well use one of the 10 scales. I don't know. 11 Q. You would agree, right, that where the line 12 is drawn between a healthy use of a platform and 13 unhealthy use of a platform is culturally informed; 14 correct? 15 MS. McNABB: Objection. Speculation. 16 THE WITNESS: I mean, I think every mental 17 health diagnosis is culturally informed. 18 As I mentioned earlier, homosexuality used 19 to be in the DSM as a mental disorder. It's no 20 longer in there. 21 So any complex biopsychosocial disease, 22 which all mental illnesses are, will have some form 23 of cultural influence. 24 BY MR. ERCOLE: 25 Q. And whether something is -- whether a</p>	<p style="text-align: right;">Page 196</p> <p>1 Q. You've given an example of workaholism -- 2 A. M-hm. 3 Q. -- I think -- 4 A. Yeah. 5 Q. -- as something that is culturally 6 informed. 7 Do you agree with that? 8 A. I think my point there is that we now as a 9 culture celebrate people who work all the time to 10 the exclusion of other activities that they could be 11 doing. And I don't think that that's a healthy 12 trend. 13 Q. Have you ever diagnosed a patient under the 14 age of 18 with social media addiction? 15 A. Yes. 16 Q. When did you do that? 17 A. I have adult patients who have social media 18 addiction who have developed their addiction when 19 they were teenagers. So the onset of their disorder 20 was in their teens. 21 Q. Okay. I know -- right. But my question is 22 a little different. 23 How about someone under the age of 18 that 24 you've diagnosed at that time with social media 25 addiction while they were under the age of 18?</p>
<p style="text-align: right;">Page 195</p> <p>1 particular -- whether use of a -- of a substance or 2 whether -- a particular behavior in one culture may 3 be healthy, but in another culture it may not be; is 4 that fair? 5 A. Typically -- typically cultures at the same 6 given time in human history will recognize the same 7 unhealthy behaviors, so I don't think that, you 8 know, at a given time in history, culture to 9 culture, you're going to see that much difference in 10 what people recognize as mental illness. I think 11 it's more an attribute of the ecosystem, you know, 12 what's available to people in terms of reinforcing 13 goods and behaviors. 14 So I -- I would argue against sort of like 15 a pure cultural relativism. Culture plays a role, 16 but it's not completely random, like, "Oh, your 17 culture is going to see this as healthy and my 18 culture isn't." 19 It's not like that. I think humans know 20 harm when they see it and will generally agree on 21 that. 22 Q. And that's regardless of -- of culture in 23 your view? 24 A. I think my answer was more nuanced than 25 that.</p>	<p style="text-align: right;">Page 197</p> <p>1 A. I don't believe so. Because -- again, 2 because I don't typically see people under the age 3 of 18, not because I haven't diagnosed that. 4 Q. Have you ever treated a patient solely for 5 social media addiction and not any other diagnosis? 6 A. Yes. 7 Q. How often do you do that? 8 A. I would say that's fairly infrequent. 9 Typically, the patients that I see who have social 10 media addiction are also struggling with other 11 mental health issues. 12 Q. Do you evaluate when you're treating those 13 patients whether or not the other psychiatric 14 conditions preceded the social media use or whether 15 the social media use preceded the other psychiatric 16 conditions? 17 A. Yes. 18 Q. If someone uses social media infrequently, 19 would you agree that he or she is unlikely to suffer 20 an addiction to social media? 21 MS. McNABB: Objection to speculation. 22 THE WITNESS: I think the risk is quite a 23 bit lower if the use is infrequent. 24 BY MR. ERCOLE: 25 Q. And what -- what is the line, then, between</p>

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<p style="text-align: right;">Page 198</p> <p>1 frequent and infrequent or infrequent and not 2 infrequent such that the risk increases? 3 A. Yeah. I mean, I don't have a specific 4 number in mind. In general, we are more concerned 5 with daily use when it comes to any addictive 6 substance or behavior. But for a very vulnerable 7 individual, even less frequent use could put them at 8 risk. 9 Q. So what would be -- would someone who uses, 10 for instance, social media once a week be at risk 11 for social media addiction disorder or use disorder 12 in your view? 13 MS. McNABB: Objection. Speculation. 14 THE WITNESS: It really depends on the 15 person and depends on what stage they are in their 16 illness. 17 BY MR. ERCOLE: 18 Q. And when you say "illness," what are you 19 referring to? 20 A. Their disease of social media addiction. 21 So if you had somebody who had gotten 22 addicted to social media and was trying to get in 23 recovery or had been in recovery for some period of 24 time, even very infrequent exposure could put them 25 at risk for relapse.</p>	<p style="text-align: right;">Page 200</p> <p>1 outpatient treatment programs for a social media use 2 disorder or addiction? 3 A. Well, we're an outpatient treatment 4 program. 5 I've referred patients to 12-step groups. 6 That's not treatment, per se, but it is a support. 7 Q. So let's look at page 5 of your report. 8 And this is where you have the definition 9 of addiction; correct? 10 So part of the definition is (as read): 11 "Addiction is the continued, 12 compulsive use of a substance or 13 engagement in a behavior despite harm to 14 self and/or others." 15 Do you see that? 16 A. Yes, I do. 17 Q. And there's a harm component to your 18 definition; correct? 19 A. Well, this is a broad definition. I go on 20 to describe in more detail the specific diagnostic 21 criteria. 22 But, yes, the harm piece is critical. 23 Q. And can harm be minor? 24 A. Yeah. 25 Q. And can harm include sort of being</p>
<p style="text-align: right;">Page 199</p> <p>1 Q. Well, how about a patient who uses social 2 media every other day, so not every day but every 3 other day? Would that -- in your view, would that 4 person be addicted to social media? 5 MS. McNABB: Objection. Speculation. 6 THE WITNESS: We don't base our diagnosis 7 on quantity or frequency of use. And you'll note 8 that the DSM doesn't use quantity and frequency 9 either for diagnosing substance use disorders. It's 10 based on the four Cs, tolerance, withdrawal. 11 BY MR. ERCOLE: 12 Q. Have you ever referred a patient to some 13 type of -- some type of clinic to address or treat 14 social media addiction? 15 A. Yes. 16 Q. How many times have you done that? 17 A. Scores of times, when I felt they needed a 18 higher level of care than what we could provide in 19 our clinic. 20 Q. Where have you referred them? 21 A. The Meadows, reSTART Life. Those are two 22 places I've referred before. 23 Q. Have you referred -- are those outpatient? 24 A. Those are residential facilities. Yeah. 25 Q. Have you ever referred patients to</p>	<p style="text-align: right;">Page 201</p> <p>1 irritable? 2 A. Mood changes as a result of social media 3 addiction are common, and irritability is a mood 4 state. So, yes. 5 (Stenographer interrupted for clarification 6 of the record.) 7 BY MR. ERCOLE: 8 Q. How about be -- feeling cranky? Is that -- 9 could that be a harm? 10 A. Cranky and irritable are synonyms to me. 11 Q. How about feeling anxious? Could that be 12 harm? 13 A. Yes. 14 Q. Being in a less positive mood, could that 15 be a harm? 16 A. Yes. 17 Q. Arguing with your parents, could that be a 18 harm? 19 A. Potentially, yes. 20 Q. Spending time away from your friends, could 21 that be a harm? 22 A. Potentially, yes. 23 Q. Who makes the decision as to whether or not 24 the behavior is causing some type of harm? 25 A. That determination can be made by different</p>

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<p style="text-align: right;">Page 202</p> <p>1 people in different contexts.</p> <p>2 Q. So can I give you a hypothetical, and you</p> <p>3 let me know what you think of it?</p> <p>4 Say I run 3 miles a day every other day for</p> <p>5 several months. I run on Monday. But due to work,</p> <p>6 I can't run on Wednesday. I would really like to</p> <p>7 run, but I just can't do it. I then get irritable</p> <p>8 at the start of -- of work because I didn't get to</p> <p>9 run on that Wednesday.</p> <p>10 Am I addicted to running?</p> <p>11 MS. McNABB: Objection. Speculation.</p> <p>12 THE WITNESS: I would not make the</p> <p>13 diagnosis of addiction based on what you've told me.</p> <p>14 BY MR. ERCOLE:</p> <p>15 Q. Okay. Why not?</p> <p>16 A. Lots and lots of reasons. There's no</p> <p>17 evidence of compulsive, out-of-control use. You</p> <p>18 haven't told me anything about harmful consequences</p> <p>19 as a result of your running.</p> <p>20 Q. Irritability can be a harmful consequence;</p> <p>21 right?</p> <p>22 A. It can be. But it's -- it's not in and of</p> <p>23 itself sufficient; right?</p> <p>24 It's the constellation of these symptoms.</p> <p>25 I also need a sense of how pervasive and</p>	<p style="text-align: right;">Page 204</p> <p>1 You could go to the DSM. You could go to the</p> <p>2 International Classification of Diseases. You could</p> <p>3 go to the ASAM definition.</p> <p>4 BY MR. ERCOLE:</p> <p>5 Q. And that's going to have the -- the</p> <p>6 specific language that you have here?</p> <p>7 A. I say here this is a shorthand way to</p> <p>8 remember the criteria. The DSM has 11 criteria.</p> <p>9 It's a lot to remember. This is a shorthand way to</p> <p>10 recall those criteria.</p> <p>11 Q. Okay. And you don't believe that all of</p> <p>12 these criteria need to be present; right?</p> <p>13 A. It's not a matter of what I believe. It's</p> <p>14 understood that these are many different aspects of</p> <p>15 the disease of addiction, and not all-comers will</p> <p>16 exhibit all of these symptoms.</p> <p>17 Q. In your view, you only need two of the</p> <p>18 criteria; right?</p> <p>19 A. Again, it's not my view. It's the</p> <p>20 generally accepted criteria.</p> <p>21 And specifically the No. 2 criteria is from</p> <p>22 the DSM. You need 2 to 3 criteria of that list of</p> <p>23 11 to be diagnosed with a mild use disorder, 4 to 5</p> <p>24 to be diagnosed with a moderate use disorder, and 6</p> <p>25 or more to be diagnosed with a severe use disorder.</p>
<p style="text-align: right;">Page 203</p> <p>1 how severe the irritability would be.</p> <p>2 Q. Okay. And so in your report itself, you</p> <p>3 discuss a shorthand description of addiction; right?</p> <p>4 That's the four Cs?</p> <p>5 A. Yes.</p> <p>6 Q. If you turn to page --</p> <p>7 A. M-hm.</p> <p>8 Q. -- I guess, 6, little letter E; is that</p> <p>9 right?</p> <p>10 A. Yeah.</p> <p>11 Q. Okay. And you also add -- and the four Cs</p> <p>12 are control, compulsion, craving, consequences; is</p> <p>13 that right?</p> <p>14 A. Yes.</p> <p>15 Q. Okay. And then you also include tolerance</p> <p>16 and withdrawal as part of that; right?</p> <p>17 A. Yes.</p> <p>18 Q. And if I wanted to go to a treatise and</p> <p>19 find something identical to what you have here that</p> <p>20 says compulsion, craving, consequences, tolerance,</p> <p>21 withdrawal as a definition of addiction, where do I</p> <p>22 go to find that?</p> <p>23 MS. McNABB: Objection. Asked and</p> <p>24 answered.</p> <p>25 THE WITNESS: There are multiple sources.</p>	<p style="text-align: right;">Page 205</p> <p>1 Q. Okay. So I'm just focused on your report</p> <p>2 right here; right?</p> <p>3 So you say in paragraph F (as read):</p> <p>4 "At least two criteria must be met to</p> <p>5 support a diagnosis of a use disorder."</p> <p>6 Right?</p> <p>7 A. I am referencing the DSM, 11 criteria. So</p> <p>8 of those 11 criteria, 2 must be met to make a</p> <p>9 diagnosis of a use disorder in the DSM.</p> <p>10 Q. Well, you -- there's no mention here in</p> <p>11 your report of any of the 11 criteria; right?</p> <p>12 You -- you've identified in Section E the</p> <p>13 six criteria, right, that you've -- you've created</p> <p>14 for a definition of addiction?</p> <p>15 MS. McNABB: Objection.</p> <p>16 THE WITNESS: That is --</p> <p>17 MS. McNABB: Form and misstates.</p> <p>18 THE WITNESS: That is incorrect.</p> <p>19 If you look at page 6 of my report --</p> <p>20 BY MR. ERCOLE:</p> <p>21 Q. M-hm.</p> <p>22 A. -- subsection small D, I will just read it</p> <p>23 for clarification for the record.</p> <p>24 I state (as read):</p> <p>25 "The DSM denotes 11 different</p>

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<p style="text-align: right;">Page 206</p> <p>1 criteria to capture the patterns of 2 behavior that are used to diagnose 3 addiction. The DSM itself does not use 4 the term 'addiction.' Instead, it uses 5 the term 'use disorder,' as in alcohol 6 use disorder, opioid use disorder, 7 nicotine use disorder, et cetera. Such 8 terminology aligns with current views of 9 the condition as a brain disease, while 10 minimizing labels that stigmatize 11 patients and create barriers to seeking 12 treatment. Other sources may identify a 13 different number of criteria or may be 14 worded differently, but such standards 15 generally include the central aspects of 16 addiction/use disorder." 17 Then I go on to say (as read): 18 "A shorthand way to remember these 19 criteria," which is an obvious reference 20 back to the DSM 11 criteria, "is the four 21 Cs." 22 Which I then describe and then qualify by 23 saying (as read): 24 "Addiction is a spectrum 25 disorder ..."</p>	<p style="text-align: right;">Page 208</p> <p>1 has tolerance, it has withdrawal, and then it has 9 2 other criteria that are encompassed by the four Cs. 3 Q. Okay. How about with respect to your 4 shorthand because that's -- that's what's written 5 here? How many of these -- of the six criteria 6 would you need? 7 A. You need at least two. 8 MS. McNABB: Objection. Asked and 9 answered. 10 BY MR. ERCOLE: 11 Q. You need at least two of your six criteria; 12 right? 13 A. Of this shorthand version, yes -- 14 Q. Yeah. 15 A. -- that maps onto it. 16 Q. Okay. That's all I was asking. I 17 appreciate that. 18 A. I did -- I did answer that before. 19 Q. Oh, okay. Sorry. I missed that. 20 A. That's okay. 21 Q. All right. So you need two of the six. 22 So let's go for the -- to the first one. 23 You have "control," is first one, which is 24 (as read): 25 "Out-of-control use, for example,</p>
<p style="text-align: right;">Page 207</p> <p>1 And that you need at least 2 of those 2 11 criteria in order to meet threshold criteria in 3 the DSM. 4 BY MR. ERCOLE: 5 Q. Okay. But the -- the -- the five -- sorry, 6 the six factors that you've identified, the four Cs, 7 coupled with tolerance and withdrawal, those are the 8 sort of short -- your shorthand for those 9 11 criteria; right? 10 A. Yes. 11 Q. Okay. And do those -- in order to have 12 addiction based upon the shorthand that you use, do 13 you -- you need at least two of those criteria; 14 right? 15 A. You need at least 2 of the 11. 16 Q. How many of the -- of the six that you've 17 identified shorthand do you need? 18 A. Because the four Cs refer to nine of the 19 criteria, it's not possible to say that from my 20 shorthand list you need X number. But you need at 21 least two. 22 Q. Okay. I'm just -- you need two of the four 23 Cs; is that correct? 24 A. No. You need 2 of the 11. And you've got 25 tolerance and withdrawal, which are -- so the DSM</p>	<p style="text-align: right;">Page 209</p> <p>1 using more than intended." 2 Right? 3 A. Yes. 4 Q. So that would be if someone uses, for 5 instance, social media more than they wanted to; is 6 that right? 7 A. I mean, that's one way to describe it, 8 yeah. 9 Q. Okay. And then you have "compulsion" -- 10 well, strike that. 11 How would you define "control," then? 12 A. As I say here, it's when using more than 13 intended or planned or an inability to cut back use 14 when necessary. 15 Q. And then "compulsion" is (as read): 16 "Mental preoccupation with using 17 against a conscious desire to abstain." 18 What does that mean? 19 A. That means a lot of mental real estate 20 taken up with thinking about using the drug and a 21 certain level of automaticity around using the drug, 22 using it even when an individual didn't intend to 23 use it. 24 So it's a kind of -- a lot of time spent 25 thinking about and wanting to use the drug.</p>

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<p style="text-align: right;">Page 210</p> <p>1 Q. And then (as read):</p> <p>2 "Craving: Physiologic and/or mental</p> <p>3 states of wanting."</p> <p>4 And that -- when you say "mental states of</p> <p>5 wanting," what do you mean by that?</p> <p>6 A. Thinking about using, making plans to use,</p> <p>7 sometimes coming up with rationalizations for why</p> <p>8 it's okay to use even though I told myself I</p> <p>9 wouldn't use. Sometimes craving can manifest as a</p> <p>10 physical sign or symptom, so cramping or sweating or</p> <p>11 something along those lines.</p> <p>12 Q. Have you -- the physical signs that you</p> <p>13 just articulated, have you ever seen physical signs</p> <p>14 in the context of someone using social media?</p> <p>15 A. Yes.</p> <p>16 Q. Is there a difference between compulsion</p> <p>17 and craving?</p> <p>18 A. There's a slight difference. Again,</p> <p>19 compulsion has to do with a lot of mental</p> <p>20 preoccupation with using the drug.</p> <p>21 And craving is often intrusive thoughts or</p> <p>22 images of needing to use and feeling like the world</p> <p>23 is going to come to an end if I don't use right now.</p> <p>24 Q. And then you have a definition of</p> <p>25 "consequences"; right?</p>	<p style="text-align: right;">Page 212</p> <p>1 more potent form to get that rewarding or</p> <p>2 reinforcing feeling, or even finding -- yeah, that</p> <p>3 at a given dose, it's just not working as well as it</p> <p>4 used to to either give pleasure or take away pain.</p> <p>5 Q. And then there's "withdrawal," right, is</p> <p>6 the last one?</p> <p>7 A. Yes.</p> <p>8 Q. And (as read):</p> <p>9 "Experiencing physical and mental</p> <p>10 distress in the absence of use."</p> <p>11 And is -- that's how you define</p> <p>12 "withdrawal"?</p> <p>13 A. Either in the absence of use or when trying</p> <p>14 to cut back.</p> <p>15 Q. Okay. And so let me go back to my running</p> <p>16 example that --</p> <p>17 A. Okay.</p> <p>18 Q. -- that I gave.</p> <p>19 If you -- in that example, wasn't -- I</p> <p>20 would have been in the mental state of wanting to</p> <p>21 run and really, in my view, needing to run, but</p> <p>22 because I wasn't able to, I became irritable; right?</p> <p>23 And I, you know, became annoyed at work.</p> <p>24 A. M-hm.</p> <p>25 Q. Doesn't that meet both the "craving" and</p>
<p style="text-align: right;">Page 211</p> <p>1 A. Yeah.</p> <p>2 Q. And that includes (as read):</p> <p>3 "Opportunity costs, other things not</p> <p>4 being done as a result of addictive</p> <p>5 behaviors."</p> <p>6 Do you see that?</p> <p>7 A. M-hm.</p> <p>8 Q. If you're engaging in behavior, aren't you</p> <p>9 always not doing some other type of behavior?</p> <p>10 A. I guess that's true.</p> <p>11 Q. Okay. And so let me go back to the -- oh.</p> <p>12 And then -- sorry. And then you have (as</p> <p>13 read):</p> <p>14 "Tolerance: Needing more time to get</p> <p>15 the same effect or finding -- or finding</p> <p>16 that a given dose" --</p> <p>17 A. This is a typo here --</p> <p>18 Q. Yeah.</p> <p>19 A. -- unfortunately.</p> <p>20 Q. -- does not -- basically does not have the</p> <p>21 same effect?</p> <p>22 A. That's right.</p> <p>23 Q. Okay. And what -- what does that mean?</p> <p>24 A. It means that finding over time you're not</p> <p>25 getting the same bang for your buck, that you need a</p>	<p style="text-align: right;">Page 213</p> <p>1 "consequences" definition?</p> <p>2 MS. McNABB: Objection. Speculation.</p> <p>3 THE WITNESS: No. No, it doesn't alone</p> <p>4 meet either of those because of the pervasiveness</p> <p>5 and severity.</p> <p>6 So you just being a little bit cranky</p> <p>7 because you couldn't run would not meet threshold</p> <p>8 criteria for -- for addiction. It would have to be</p> <p>9 much more significant than that.</p> <p>10 BY MR. ERCOLE:</p> <p>11 Q. How much more significant?</p> <p>12 A. There would have to be consequences that</p> <p>13 either you or others appreciated as adversely</p> <p>14 impacting your life.</p> <p>15 Q. Okay. Like, can you give me -- give me --</p> <p>16 give me an example?</p> <p>17 MS. McNABB: Objection. Speculation.</p> <p>18 THE WITNESS: I mean, I can't really.</p> <p>19 It's -- it's quite an artificial scenario that</p> <p>20 you've concocted there, and I would actually need a</p> <p>21 lot more information to be able to --</p> <p>22 BY MR. ERCOLE:</p> <p>23 Q. Okay. Well, how about your addiction to</p> <p>24 erotic romance novels? What were the consequences</p> <p>25 there?</p>

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<p style="text-align: right;">Page 214</p> <p>1 A. So the consequences were that I was 2 spending less time with my kids, so less time 3 invested in my family, which is an important value 4 to me. I became progressively more depressed and 5 anxious. I was spending time all through the night 6 reading erotica, and so I wasn't sleeping and I was 7 going to work the next day sleep-deprived. 8 Over time, my ability to take pleasure in 9 other more modest rewards was waning, which is a 10 very common manifestation of addiction, a kind of 11 narrowing of our focus on this one reward, less 12 ability to take pleasure in other more modest 13 rewards. 14 You know, I never got to a point where I 15 needed to be hospitalized or I needed professional 16 treatment or, you know, I considered hurting myself 17 or anything like that. But there was a slow drift 18 toward the kinds of consequences that we typically 19 see in addiction. 20 Q. In -- on -- for, I guess, the letter G, 21 there's a reference to (as read): 22 "Quantity and frequency of 23 consumption are not included in the 24 criteria for addiction, although they are 25 correlated with addictive use."</p>	<p style="text-align: right;">Page 216</p> <p>1 THE WITNESS: I'd rather not speculate. 2 BY MR. ERCOLE: 3 Q. How about if someone was using social media 4 for one minute a day? 5 MS. McNABB: Objection. 6 BY MR. ERCOLE: 7 Q. Is that possible they could be addicted to 8 it? 9 MS. McNABB: Objection. Speculation. 10 THE WITNESS: I'd rather not speculate. 11 BY MR. ERCOLE: 12 Q. You'd need to actually see the facts; 13 correct? 14 Strike that. 15 You'd actually need to see and understand 16 the factual circumstances of that particular 17 plaintiff to under- -- or that particular individual 18 to understand; right? 19 MS. McNABB: Objection. Speculation. 20 THE WITNESS: The diagnosis isn't based on 21 quantity or frequency. I would have to do an 22 assessment based on the four Cs, tolerance, 23 withdrawal. 24 BY MR. ERCOLE: 25 Q. And assessment of a particular individual;</p>
<p style="text-align: right;">Page 215</p> <p>1 Do you see that? 2 A. Yes. 3 Q. Is that the same in your view for substance 4 use disorder? 5 A. Substance use disorder, also -- quantity 6 and frequency also matter a great deal. 7 Q. Well, for substance use disorders, are 8 quantity and frequency of consumption -- 9 (Stenographer interrupted for clarification 10 of the record.) 11 BY MR. ERCOLE: 12 Q. For substance use disorders, are quantity 13 and frequency of consumption included in the 14 criteria for addiction? 15 A. As I state right here, they are not. 16 Q. Is it possible, in your view, for someone 17 to have social media addiction if they are only 18 using social media one time a day for ten minutes a 19 day? 20 MS. McNABB: Objection. Speculation. 21 THE WITNESS: Again, we don't base the 22 diagnosis on quantity or frequency of use. 23 BY MR. ERCOLE: 24 Q. But it might be possible; correct? 25 MS. McNABB: Objection.</p>	<p style="text-align: right;">Page 217</p> <p>1 right? 2 A. Well, we're talking about individuals and 3 groups of individuals. So if we're talking about 4 general causation of the population level, then my 5 opinion about that would be informed by my knowledge 6 about individuals as well as large groups of 7 individuals. 8 Q. Okay. So maybe my question wasn't clear or 9 I'm just asking it in a poor way. But I thought you 10 were saying -- when I asked, "Can someone who uses 11 social media for a few minutes a day be addicted to 12 social media?" you said you would need to know more; 13 is that fair? 14 A. M-hm. Yes. 15 Q. Okay. And you would need to know more 16 based upon the facts of that particular person's 17 circumstances; right? 18 A. Yes. 19 Q. Okay. From a -- but your testimony is 20 you're testifying about general causation at a 21 population level; right? 22 A. That's right. 23 Q. Okay. So at a population level, can 24 someone -- can people who use social media one time 25 a day be addicted to social -- sorry. Strike that.</p>

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<p style="text-align: right;">Page 218</p> <p>1 Can people who use social media a few 2 minutes a day be addicted to social media? 3 MS. McNABB: Objection. Speculation. 4 THE WITNESS: And my answer here is the 5 same. Time spent is relevant. The more time spent, 6 the higher the risk of addiction, the more likely 7 they are to be diagnosed with a social media 8 addiction. 9 But we don't base the diagnosis on time 10 spent because we recognize that some people can 11 spend a lot of time on social media and not 12 necessarily be addicted, and some people can spend 13 shorter amounts of time on social media and be 14 addicted. So ... 15 BY MR. ERCOLE: 16 Q. In your practice, what was the shortest 17 amount of time someone was using social media on a 18 daily basis that you -- or for whom you affixed the 19 "social media addiction" diagnosis to? 20 A. I can't answer that. I didn't quantify 21 that. I don't base the diagnosis on time spent. 22 Q. Do you ask about how much time you're on 23 social media? 24 A. Yes. 25 Q. Okay. And based upon that question that</p>	<p style="text-align: right;">Page 220</p> <p>1 social media addiction and risky social media use? 2 A. Typically you would ask about use. You 3 would ask about harms related to use. 4 And then you would go through the 5 diagnostic criteria for social media addiction. And 6 if they met the diagnostic criteria for social media 7 addiction, you would diagnose that. 8 If they did not meet those criteria but 9 there were still harms related to use, then you 10 would address those harms and characterize those as 11 occurring outside of having a social media 12 addiction. 13 Q. And so risky behavior would be someone that 14 experienced harms related to use but just did not 15 meet all the other criteria? 16 A. Right. Experienced harms related to use 17 but didn't manifest the phenomenology that we 18 recognize as addiction characterized by these 19 patterns of behavior that repeat themselves across 20 individuals, time periods, and drugs of choice, 21 whether it's a substance or a behavior. 22 Q. Can someone engage in risky social media 23 use without experiencing harm, in your view? 24 A. I mean, definitionally risky use means that 25 they're experiencing harm.</p>
<p style="text-align: right;">Page 219</p> <p>1 you've asked your patients, what was the -- I guess, 2 the shortest amount of time on a daily basis that 3 someone you diagnosed with social media was using 4 social media? 5 A. Again, I can't answer that. It's not the 6 most important aspect of diagnosing social media 7 addiction. I don't keep a running tab of how much 8 time different patients have spent. 9 Q. Okay. But -- so you can't answer it 10 because you -- just sitting here today, you don't 11 recall the shortest time period someone was daily -- 12 using social media on a daily basis where you 13 diagnosed them with social media addiction? 14 A. Well, I both don't recall, wasn't focused 15 on that; and although it's relevant, it's not a 16 diagnostic criterion. 17 Q. You -- on letter H of your report, you talk 18 about (as read): 19 "Risky use substance and behaviors, 20 sometimes called 'misuse,' includes 21 behaviors associated with harm that may 22 or may not be coincident with addiction." 23 Did I read that right, hopefully? 24 A. Yes. 25 Q. Okay. How do you distinguish between</p>	<p style="text-align: right;">Page 221</p> <p>1 Q. Would you agree that the literature 2 analyzing the effects of social media use sort of 3 suffers a bit from inconsistent methods of testing 4 for social media addiction or defining social media 5 addiction? 6 MS. McNABB: Objection. Form. 7 THE WITNESS: Not really. 8 BY MR. ERCOLE: 9 Q. So in your view, there's a consistent 10 definition of social media addiction throughout all 11 of the medical literature? 12 A. I wouldn't go that far, but I would say 13 that the various definitions have enough overlap to 14 suit me in terms of capturing the phenomenology. 15 And again, I would just emphasize that all 16 mental health disorders are diagnosed based on 17 patterns of behavior or phenomenology, and these 18 patterns are clearly recognizable when you see them. 19 And whether you call it one thing or another, use 20 these four criteria or two of those criteria and two 21 others, there's a point at which the overall gestalt 22 is the same and you're capturing that pattern of 23 behavior, which is clearly recognizable as an 24 addictive pattern. 25 Q. Is there -- for the medical literature, is</p>

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<p style="text-align: right;">Page 222</p> <p>1 there a standard definition of social media 2 addiction that is carried throughout the literature? 3 MS. McNABB: Objection. Asked and 4 answered. 5 THE WITNESS: Yeah, I feel like I have the 6 same answer that I gave. 7 BY MR. ERCOLE: 8 Q. That there's overlapping definitions? 9 A. That wasn't my answer. 10 Q. Is there a standard definition of 11 "problematic social media use" that exists in the 12 medical literature? 13 A. Problematic social media use is often used 14 synonymously with social media addiction, and that's 15 generally how I use it. It is how I use it in my 16 report. It's how Meta uses it. 17 But some of the literature equates -- I 18 think is using "problematic social media use" 19 with -- more like risky use; but, again, most of the 20 literature I reviewed and that I've included is 21 really focused on the addiction phenomenon. 22 Q. And do all of the medical literature that 23 you've cited in your report, which we'll -- we'll 24 get into in a little bit, does that -- do each of 25 those -- do those studies provide a -- strike that.</p>	<p style="text-align: right;">Page 224</p> <p>1 as a result of social media addiction? 2 A. I am aware of individuals who have almost 3 died, yes. 4 Q. You're not aware of anyone that has passed 5 away as a result of social media addiction; correct? 6 A. No. But I have patients who have gotten 7 pretty close to dying as a result of social media 8 addiction. 9 Q. And what were the -- what were the 10 circumstances there? 11 A. Body dysmorphia and anorexia, depression, 12 self-harm, suicidality. 13 Q. So for body dysmorphia, how in your view 14 does social media lead to body dysmorphia? 15 A. M-hm. What we see with body dysmorphia as 16 a sequelae of social media addiction is a repeated 17 pattern of use with a recursive feedback loop that 18 pushes content related to images, body images, that 19 then give that individual a distorted sense through 20 negative social comparison. As well as just an 21 enormous amount of time spent looking at themselves 22 on social media and then fixating on various parts 23 of their face or what have you, feeling that their 24 face isn't right, that their nose is too big or 25 their lips are too small or -- or what have you.</p>
<p style="text-align: right;">Page 223</p> <p>1 Do each of those studies that you reference 2 in your report provide a definition of social media 3 addiction in those studies? 4 MS. McNABB: Objection. Form. 5 Speculation. Foundation. 6 THE WITNESS: I would really need you to 7 cite to it. I mean, there are so many different 8 types of studies. 9 BY MR. ERCOLE: 10 Q. Sure. 11 Are you aware of anyone who has -- are you 12 aware of anyone for whom you've diagnosed social 13 media addiction who has suffered a -- strike that. 14 Let me go to footnote 12 of your report. 15 One of the statements in the -- for social 16 media -- one of the -- the statement at the -- the 17 sentence at the end reads (as read): 18 "Without treatment or engagement in 19 recovery activities, addiction is 20 progressive and can result in disability 21 or premature death." 22 Do you see that? 23 A. Yes. 24 Q. Okay. Are you aware of anyone who you've 25 diagnosed with social media addiction who has died</p>	<p style="text-align: right;">Page 225</p> <p>1 Q. And are you aware of any studies, 2 scientific studies, that have evaluated whether 3 social media -- strike that. 4 Are you aware of any medical studies that 5 have evaluated whether the features of social media, 6 independent of the content of social media, can lead 7 to or cause body dysmorphia? 8 MS. McNABB: Objection to form. 9 THE WITNESS: I am aware of studies showing 10 that the design elements of social media are what 11 substantially contribute to its addictive potential, 12 but I'm not aware of anything specifically looking 13 at body dysmorphia. But then I also didn't search 14 for that literature specifically. 15 BY MR. ERCOLE: 16 Q. How about -- you mentioned anorexia. 17 How does social media, in -- in your 18 view -- how does that lead to anorexia? 19 A. The addictive design/nature of the platform 20 creates recursive feedback loops that optimize for 21 time spent and also push increasingly potent images 22 to the consumer. And in the case of eating 23 disorders, typically this will end up pushing the 24 user toward extreme anorexia-related content. 25 And although the content is relevant,</p>

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<p style="text-align: right;">Page 226</p> <p>1 what's really most relevant is the platform design 2 features that promoted the individual to consuming 3 that kind of extreme content and then rewarded them 4 in that social community for, you know, social 5 validation on that platform. 6 Q. You mentioned images. What images were you 7 referring to? 8 A. Well, it could be images or it could be a 9 social media influencer who's encouraging consumers 10 and followers to lose weight, to post their weight, 11 to try to get progressively thinner, to get social 12 validation through those means. 13 Q. And how about images for body dysmorphia? 14 A. M-hm. 15 Q. What types of images are you referring to? 16 A. Again, my experience and knowledge of body 17 dysmorphia is based primarily on my clinical work. 18 And what I see in patients who develop social media 19 addiction and then develop body dysmorphia is just 20 that they're spending a lot of time looking at 21 themselves, looking at other people, and begin to 22 then get a very distorted view of their -- their own 23 bodies. 24 They also have reported getting a lot of 25 positive feedback for, you know, getting thinner or</p>	<p style="text-align: right;">Page 228</p> <p>1 and not the user; right? 2 MS. McNABB: Objection. Misstates prior 3 testimony. 4 THE WITNESS: So the likes, the shares, the 5 comments, the followers, that's all intrinsic to the 6 platform and actually a key part of what keeps 7 people engaged, is to try to get up their metrics, 8 to get social validation, to, you know, get streaks 9 and then keep streaks, get likes, get comments. All 10 of that is part of that recursive feedback loop. 11 You know, the content is relevant, but the 12 content is not the most important thing. It's the 13 design features that make the medium much more 14 reinforcing than a natural reward would be. 15 BY MR. ERCOLE: 16 Q. Isn't liking something content? 17 MS. McNABB: Objection. Speculation. 18 THE WITNESS: I don't believe so, no. 19 BY MR. ERCOLE: 20 Q. How about commenting on something? 21 MS. McNABB: Same objection. 22 BY MR. ERCOLE: 23 Q. Isn't that content? 24 A. I think that the interactive nature of the 25 platform is what contributes to its highly</p>
<p style="text-align: right;">Page 227</p> <p>1 using a filter, you know, changing their looks in 2 some way. 3 Q. When you say "positive feedback," you mean, 4 like, third-party comments on platforms, that -- 5 A. Likes, comments -- 6 Q. Hold on. Let me -- let me -- sorry. 7 Let -- 8 A. -- followers, shares. It's all those 9 things. 10 Q. Okay. 11 A. All those addictive design elements. 12 Q. Okay. So sorry. Let me just finish my 13 question. 14 A. Okay. 15 Q. You're referring to -- when you're talking 16 about positive feedback, you're referring to 17 third-party comments made to a user on social media; 18 is that fair? 19 MS. McNABB: Objection. Misstates 20 testimony. 21 THE WITNESS: I'm not sure what you mean by 22 "third-party comments." I'm ... 23 BY MR. ERCOLE: 24 Q. Sure. 25 Comments by not the social media platform</p>	<p style="text-align: right;">Page 229</p> <p>1 reinforcing potential. 2 So I guess to some extent, you know, 3 comments are content. I could agree with that to 4 some extent. 5 Q. And -- and when you say "social 6 validation," what are you -- you've used that word a 7 couple time- -- phrase. 8 What are you referring to? 9 A. One of the main reasons that people go onto 10 social media is to feel better about themselves, you 11 know, get people to say positive things about them, 12 to feel that they're, you know, part of a community 13 or part of a tribe or included or in the know. 14 Q. Doesn't that all involve content, for 15 instance, social validation being derived from 16 positive things that someone is saying to the user? 17 A. I mean, content can be a part of it. But 18 you can have no comments and just have likes and 19 followers and number of shares that are really 20 primary to that social validation piece. 21 I would also add that many individuals 22 who -- who get addicted to social media are going on 23 to sort of manage negative emotions and hear 24 positive affirmations. 25 And there are a lot of videos out there</p>

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<p style="text-align: right;">Page 230</p> <p>1 that are consumed by kids that deliver a lot of</p> <p>2 affirmations and accolades and compliments and this</p> <p>3 kind of thing sometimes through a social media</p> <p>4 influencer, sometimes through, you know, some kind</p> <p>5 of AI bot. But here we're mainly talking about, you</p> <p>6 know, social media, people who are -- other people</p> <p>7 who are on the platform.</p> <p>8 Q. And that's a bad thing in your view?</p> <p>9 A. I believe that it can be a bad thing,</p> <p>10 especially for a vulnerable subset of users.</p> <p>11 Q. Are you aware of any study out there that</p> <p>12 has evaluated whether or not the features of social</p> <p>13 media, independent of content, can lead to anorexia?</p> <p>14 A. There are studies out there evaluating</p> <p>15 features, independent of content, showing that these</p> <p>16 features make social media or that -- or similar</p> <p>17 media more reinforcing. But I am not aware of</p> <p>18 any -- any studies looking directly at that and</p> <p>19 anorexia.</p> <p>20 Q. Okay.</p> <p>21 A. And, again, that was also not -- not my --</p> <p>22 my ask; right?</p> <p>23 My understanding is the judge did not want</p> <p>24 duplication here, and so I didn't focus on that</p> <p>25 specifically. I focused on addiction.</p>	<p style="text-align: right;">Page 232</p> <p>1 they want to, and become despondent and -- and</p> <p>2 hopeless and take their own lives.</p> <p>3 Q. And I think you testified earlier, you're</p> <p>4 not aware of anyone that has taken their own life as</p> <p>5 a result of social media usage based upon the -- the</p> <p>6 patients you treated; right?</p> <p>7 A. Based upon the patients that I've treated</p> <p>8 in my clinical practice, that is correct. But I am</p> <p>9 very aware of kids who have gotten, you know,</p> <p>10 suicidal as a result of their involvement in social</p> <p>11 media.</p> <p>12 Q. Okay. And that's based upon people you've</p> <p>13 treated?</p> <p>14 A. Yes.</p> <p>15 Q. Have you looked at -- strike that.</p> <p>16 Are there any studies that you can identify</p> <p>17 where it shows -- strike that.</p> <p>18 Are you aware of any studies that have</p> <p>19 evaluated whether or not the features of social</p> <p>20 media, independent of content, causes or contributes</p> <p>21 to suicidality?</p> <p>22 A. Give me a moment to look --</p> <p>23 Q. Sure.</p> <p>24 A. -- at my report.</p> <p>25 Almost there. Let me check one more thing.</p>
<p style="text-align: right;">Page 231</p> <p>1 Q. Okay. Fair enough.</p> <p>2 With respect to suicide -- with respect to</p> <p>3 suicide or -- yeah, let's start with suicide.</p> <p>4 Can social media lead to suicide in your</p> <p>5 view?</p> <p>6 A. Yes.</p> <p>7 Q. Okay. And how does that happen?</p> <p>8 A. Well, it happens in different ways for</p> <p>9 different consumers. But a typical trajectory would</p> <p>10 be someone who's on social media a lot, let's say</p> <p>11 addicted to the platform, comes to rely on the</p> <p>12 platform in an addictive way for their identity and</p> <p>13 their social validation, and then gets bullied on</p> <p>14 the platform or gets extorted on the platform or,</p> <p>15 even if it's separate from that, just eventually</p> <p>16 gets so depressed and anxious and not sleeping and</p> <p>17 not caring for themselves that they're essentially</p> <p>18 suicidal because they're depressed from excessive</p> <p>19 social media use.</p> <p>20 So there are different mechanisms. Since</p> <p>21 I'm looking specifically at addiction, the mechanism</p> <p>22 is primarily the same mechanism that we see when</p> <p>23 people get suicidal from using drugs and alcohol,</p> <p>24 that eventually with heavy, prolonged use, they</p> <p>25 become depressed, anxious, unable to stop even when</p>	<p style="text-align: right;">Page 233</p> <p>1 Yeah, I'm not finding anything directly</p> <p>2 related to suicide.</p> <p>3 Q. Are you aware of any studies that have</p> <p>4 evaluated whether or not the features of social</p> <p>5 media cause or contribute to anxiety or depression,</p> <p>6 independent of and stripping out content?</p> <p>7 MS. McNABB: Objection to form.</p> <p>8 THE WITNESS: I am aware of studies showing</p> <p>9 that the addictive design features contribute to</p> <p>10 depression, and I described some of those in my</p> <p>11 report.</p> <p>12 BY MR. ERCOLE:</p> <p>13 Q. What study, in particular, can you point me</p> <p>14 to that did an evaluation of -- of the impact, if</p> <p>15 any, of social media features, independent of social</p> <p>16 media content, on anxiety or depression?</p> <p>17 MS. McNABB: Objection to form.</p> <p>18 THE WITNESS: Let me just reference my</p> <p>19 report.</p> <p>20 So on page 27 of my report, I review a</p> <p>21 study by Shakya and Christakis that looked at time</p> <p>22 spent on Facebook and worsened mental health</p> <p>23 outcomes. And they specifically looked at</p> <p>24 interactive features, such as the number of Facebook</p> <p>25 friends they had or the friend count, the number of</p>

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<p style="text-align: right;">Page 234</p> <p>1 times they clicked on the "like" button, including 2 lifetime "like" count, the number of links they had 3 clicked in the past 30 days, the number of times 4 they updated their status in the past 30 days. 5 And they concluded that it was content -- 6 not content, but the sheer amount of time and the 7 interactive engagement that creates the harm. They 8 said, quote (as read): 9 "Our models cannot identify the 10 mechanism by which Facebook use may lead 11 to reduced well-being." 12 THE STENOGRAPHER: I -- 13 THE WITNESS: Oh, sorry. A little slower? 14 THE STENOGRAPHER: Yeah. And speak up a 15 little bit for me, if you would, please. 16 THE WITNESS: That's basically what I 17 wanted to say there. 18 Also, there's a study by Cheng and Davis, 19 page 28 of my report, where they surveyed 20,000 20 Facebook users in the U.S., measuring perceived 21 problematic Facebook use, using server logs of 22 aggregated behavioral data for previous four weeks, 23 such as the amount of time respondents spent on the 24 site and the counts of interactions with close 25 friend, finding that 3 percent of Facebook users</p>	<p style="text-align: right;">Page 236</p> <p>1 Instagram's own documents stated that 2 (as read): 3 "Notifications make it harder for 4 them to manage the amount of time they 5 spend on the app, and 32 percent say the 6 number of notifications they receive can 7 be overwhelming. 8 "People with reported problematic use 9 of Facebook received 27.4 percent more 10 notifications than people who did not 11 report problematic use and responded to a 12 greater fraction of these notifications. 13 And they were more likely to respond to 14 notifications when they were about 15 replies to comments they had made." 16 People who deactivated their Facebook 17 accounts, which can be a proxy for those struggling 18 with addictive or compulsive use, were -- received 19 more notifications than the average user and 20 responded to them faster. 21 BY MR. ERCOLE: 22 Q. Dr. Lembke, do you remember my original 23 question? 24 A. Yeah. 25 Q. What was it?</p>
<p style="text-align: right;">Page 235</p> <p>1 developed a severe social media addiction and 2 55 percent a mild social media addiction. That was 3 independent content. 4 Importantly, they found things like that 5 people experiencing problematic use sent 6 62.7 percent more messages than those who are not 7 experiencing problematic use, despite spending only 8 21.6 percent more time overall on Facebook. 9 And by normalizing the amount of time spent 10 on the site, people with problematic use sent 11 38.7 percent more messages per hour. They were also 12 36.7 percent more likely to have sent more messages 13 than they received. 14 Qualitative studies make it very clear that 15 the design features separate from the content are 16 what promote addictive use. 17 In a Meta qualitative study, one user said 18 (as read): 19 "'Red dots are toxic on the home 20 screen.' Red dots are a form of 21 notification. 22 "Instagram internal documents 23 described frequent checking, including 24 clearing of notifications as a key aspect 25 of Instagram problematic use."</p>	<p style="text-align: right;">Page 237</p> <p>1 A. You said am I aware of any studies showing 2 that the features of the social media platforms 3 contributed to harms, I think you said anxiety, 4 depression, or contributed to harms separate from 5 content? 6 And so I'm trying to tell you what that 7 evidence is. There's lots of it. I can -- 8 Q. Yeah. 9 A. -- keep going here. 10 Q. Well, how about this: How about sitting 11 here right now, how about any -- any 12 peer-reviewed -- let's focus on peer reviewed -- 13 experimental studies that have evaluated whether or 14 not social media -- strike that. 15 Any peer-reviewed experimental studies that 16 you can identify showing whether or not social media 17 features, independent of content, lead to anxiety or 18 depression? 19 MS. McNABB: Objection to form. 20 THE WITNESS: What do you mean by 21 "experimental studies"? 22 BY MR. ERCOLE: 23 Q. How do you -- how would you define an 24 "experimental study"? 25 A. Well, typically, experimental studies are</p>

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<p style="text-align: right;">Page 238</p> <p>1 randomized controlled trials. You have two groups 2 of people. You do an intervention. You see the 3 outcome. 4 Q. Anything like that? 5 Yes. Let's use that definition. 6 Any studies that you can identify that are 7 experimental studies where the authors evaluated 8 whether or not the features of social media, 9 independent of content, lead to anxiety or 10 depression? 11 MS. McNABB: Objection to form. 12 THE WITNESS: Yeah. So experimental 13 studies are a high bar. I'm not aware of any 14 experimental studies like that. 15 But there are studies, as I've already 16 mentioned, that do show that features -- design 17 features, independent of content, contribute to 18 worsened mental health. I mentioned the Shakyra and 19 Christakis study. I mentioned the Meta, Cheng and 20 Davis study. Those are two examples, and those are 21 both peer reviewed. 22 I mean, the Facebook study was presented at 23 a -- the conference on human factors in computing 24 systems. Typically to present a study at a 25 conference proceeding, there's some kind of</p>	<p style="text-align: right;">Page 240</p> <p>1 because, essentially, they had people either reduce 2 or stop use of social media for a period of time. 3 Q. Yeah, right. 4 My question is different; right? 5 I'm asking whether or not any -- whether 6 there's any peer-reviewed experimental studies that 7 have separated out the impact of features versus the 8 impact of content with respect to social media? 9 A. Yeah. 10 MS. McNABB: Objection to form. 11 THE WITNESS: So I've described that there 12 are peer-reviewed studies that do that. I'm not 13 aware of any experimental randomized controlled 14 trials that do that. 15 BY MR. ERCOLE: 16 Q. And the studies -- the peer-reviewed 17 studies you refer -- like, you're aware of are the 18 Facebook studies that you've referenced? 19 A. I also talked about the Shakyra and 20 Christakis studies. There's also the NASEM report, 21 which is -- which states -- and I'll just turn to 22 that in my report. 23 Q. What page are you on? 24 A. Yeah, let me get there. 25 So this is page 22. In the NASEM report, I</p>
<p style="text-align: right;">Page 239</p> <p>1 peer-review process. 2 BY MR. ERCOLE: 3 Q. I think we may have a different 4 understanding of what those studies show or -- or 5 don't show. 6 But just so that the answer to my question 7 is clear, you're not aware of any peer-reviewed 8 experimental study that has evaluated whether or not 9 social media features, independent of content, cause 10 or contribute to anxiety or depression; correct? 11 MS. McNABB: Objection to form and 12 argumentative. 13 THE WITNESS: I feel like I already 14 answered that. And if you'll give me one moment, I 15 can take another look here to see if my answer is 16 different or if I can add to my answer. 17 Yeah, sorry. So there's more. If you look 18 at page 81, my report, summarize some experimental 19 studies where they asked individuals to reduce their 20 social media use for a period of time and then 21 analyzed the impact on mental health. 22 BY MR. ERCOLE: 23 Q. Did those studies separate features from 24 content? 25 A. So those studies included the features</p>	<p style="text-align: right;">Page 241</p> <p>1 quote (as read): 2 "In a larger sense, algorithms, which 3 are generally proprietary, serve the end 4 goals of keeping users engaged for as 5 long as possible and generating revenue," 6 unquote. 7 And then, quote (as read): 8 "While an algorithm may be innocuous, 9 the way it presents content can be 10 harmful, with more sensational and 11 provocative posts given higher priority 12 in users' feeds, especially if the user 13 has responded to a similar type of post 14 in the past. This practice has the 15 potential to create distortions and give 16 rise to recursive feedback loops. 17 Recursive feedback can, in turn, 18 exacerbate problems with harmful content 19 and misinformation. Recursive feedback 20 can also promote any number of fringe 21 views, from unscientific health 22 treatments to conspiracy theories." 23 Q. And the NASEM report that you're referring 24 to is the National Academy of Sciences, Engineering, 25 and -- what's the M stand for?</p>

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<p style="text-align: right;">Page 242</p> <p>1 A. Medicine.</p> <p>2 Q. Medicine.</p> <p>3 That's the report you're referring to?</p> <p>4 A. Yes.</p> <p>5 Q. Okay. Any -- anything -- any other ones?</p> <p>6 A. Not that I can recall at this time.</p> <p>7 Q. Okay. Can I call it the "NASEM report"?</p> <p>8 A. Sure.</p> <p>9 Q. Because I think that's the language you</p> <p>10 used; right?</p> <p>11 A. Yes.</p> <p>12 Q. Okay. The National Academies of Sciences,</p> <p>13 Engineering, and Medicine; right?</p> <p>14 A. Yes. I think so, yeah.</p> <p>15 Q. Okay. Three separate academies; right?</p> <p>16 A. I believe so -- well, it's one academy.</p> <p>17 Q. I think it's academies; right? There are</p> <p>18 three separate ones; no?</p> <p>19 A. Okay.</p> <p>20 Q. I don't know. Do you know one way or the</p> <p>21 other?</p> <p>22 A. I don't know for sure. I thought it was</p> <p>23 one body.</p> <p>24 Q. They created a committee to study this</p> <p>25 issue of social media and adolescent mental health;</p>	<p style="text-align: right;">Page 244</p> <p>1 Q. Do you hold yourself out as an expert in</p> <p>2 epidemiology?</p> <p>3 A. I hold myself out as having expertise in</p> <p>4 epidemiology.</p> <p>5 Q. And product design too when it comes to</p> <p>6 social media; right?</p> <p>7 A. When it comes to social media, yes. And</p> <p>8 other addictive products.</p> <p>9 Q. Who was the -- let me ask this: Would you</p> <p>10 hold yourself out as an expert in the design of</p> <p>11 romance novels?</p> <p>12 MS. McNABB: Objection. Argumentative.</p> <p>13 THE WITNESS: No.</p> <p>14 BY MR. ERCOLE:</p> <p>15 Q. Who was the -- do you know who the chair of</p> <p>16 the committee was?</p> <p>17 A. I don't.</p> <p>18 Q. Do you know -- have you ever -- I'll</p> <p>19 probably mispronounce -- Sandro Galea, who's the</p> <p>20 dean of the School of Health at Boston University.</p> <p>21 Are you familiar with him?</p> <p>22 A. No.</p> <p>23 Q. Do you agree that the direction of the</p> <p>24 relationship between social media and health is</p> <p>25 difficult to determine because social media may</p>
<p style="text-align: right;">Page 243</p> <p>1 right?</p> <p>2 A. Yes.</p> <p>3 Q. And they crafted or the committee created a</p> <p>4 report; right?</p> <p>5 A. (Nonverbal response.)</p> <p>6 Q. And you're familiar with that report?</p> <p>7 A. Yes.</p> <p>8 Q. And the committee from that report found</p> <p>9 that, quote -- that its, quote (as read):</p> <p>10 "Review of the literature did not</p> <p>11 support the conclusion that social media</p> <p>12 causes changes in adolescent health at</p> <p>13 the population level."</p> <p>14 Right?</p> <p>15 A. M-hm.</p> <p>16 Q. That's a "yes"?</p> <p>17 A. That's what it says, yes.</p> <p>18 Q. Okay. And you disagree with that</p> <p>19 conclusion; right?</p> <p>20 A. I disagree, yes.</p> <p>21 Q. Okay. Did the committee have</p> <p>22 epidemiologists on it?</p> <p>23 A. I don't know.</p> <p>24 Q. Are you an epidemiologist?</p> <p>25 A. I have expertise in that area.</p>	<p style="text-align: right;">Page 245</p> <p>1 influence a health outcome and a health outcome may</p> <p>2 influence social media use?</p> <p>3 MS. McNABB: Objection. Form. And</p> <p>4 foundation.</p> <p>5 THE WITNESS: What's your question?</p> <p>6 BY MR. ERCOLE:</p> <p>7 Q. Do you agree that the -- well, let me ask</p> <p>8 this: Do you agree that the relationship between</p> <p>9 social media and health is complex?</p> <p>10 MS. McNABB: Objection to form.</p> <p>11 THE WITNESS: Well, what do you mean by</p> <p>12 "complex"?</p> <p>13 BY MR. ERCOLE:</p> <p>14 Q. I mean how would you define "complex"?</p> <p>15 A. I -- I can't answer that question "yes" or</p> <p>16 "no."</p> <p>17 Q. Okay. Do you agree that the direction of</p> <p>18 the relationship between social media and health is</p> <p>19 difficult to determine because social media may</p> <p>20 influence a health outcome and a health outcome may</p> <p>21 influence social media use?</p> <p>22 A. Well, I don't think it's difficult to</p> <p>23 determine. I've done a systematic review of the</p> <p>24 evidence, and I think it's clear that social media</p> <p>25 adversely impacts mental health of kids.</p>

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<p style="text-align: right;">Page 246</p> <p>1 Q. Okay. And so -- and, again, you disagree 2 with the conclusion of the committee from the 3 National Academies of Sciences, Engineering, and 4 Medicine on that issue; right? 5 A. I believe that the statement that you read 6 is undermined by other statements in the report 7 which do not support that conclusion. 8 Q. Okay. And, in fact, I think you put in 9 your report that you believe the -- that the 10 National Academies of Sciences, Engineering, and 11 Medicine may be biased because it has members with 12 ties to industry; is that right? 13 A. I mean, each NASEM report is created by a 14 unique body of individuals, and how those 15 individuals are vetted changes from report to 16 report. 17 So I don't just take each report as equally 18 robust to a report that came from the same 19 organization but addresses a different issue. I 20 think that each report needs to be taken on its own 21 terms. 22 And as I've stated in my report, the 2024 23 NASEM report has been criticized for inadequate 24 representation of public health expertise as well as 25 inclusion of individuals with financial ties to</p>	<p style="text-align: right;">Page 248</p> <p>1 conflicts of interest? 2 A. Yes. 3 MS. McNABB: Objection. 4 BY MR. ERCOLE: 5 Q. And it can be misleading if you don't? 6 MS. McNABB: Objection. 7 THE WITNESS: It depends on what the 8 context is. I think it varies. 9 BY MR. ERCOLE: 10 Q. Do you think it's important to do that in 11 academic literature? 12 A. Yes. 13 MR. ERCOLE: Can we take a -- can we take a 14 pause, maybe like a five-minute break? 15 THE VIDEOGRAPHER: The time is 2:41. We're 16 off the record. 17 (Recess taken from 2:41 to 3:05.) 18 THE VIDEOGRAPHER: The time is 3:05. We're 19 back on the record. 20 BY MR. ERCOLE: 21 Q. Dr. Lembke, before we broke, you mentioned 22 the study by Shakya and Christakis. 23 A. M-hm. 24 Q. Do you recall that? 25 A. Yes.</p>
<p style="text-align: right;">Page 247</p> <p>1 industry. 2 Q. Wasn't the chair of the committee the dean 3 of the School of Health at Boston University? 4 MS. McNABB: Objection. Foundation. 5 BY MR. ERCOLE: 6 Q. Who -- do you know how many people were on 7 the committee? 8 A. I do not. 9 Q. Do you know which individuals, in your 10 view, were tainted by industry? 11 A. I do not. 12 Q. Do you know any of the names of any of the 13 individuals around that committee? 14 A. Not by memory. 15 Q. Can you identify a single individual who 16 had a conflict of interest who was on the committee 17 that authorized the report? 18 A. I don't recall their names. 19 Q. Do you know whether or not the committee 20 sought advice from lots of other scholars and 21 experts in the field in crafting the report? 22 MS. McNABB: Objection. Speculation. 23 THE WITNESS: I don't know. 24 BY MR. ERCOLE: 25 Q. Is it important, in your view, to disclose</p>	<p style="text-align: right;">Page 249</p> <p>1 Q. And it was on, I think, page 27 of your 2 report. 3 Is that where you referenced that? 4 Do you mind turning to that? 5 A. Yes. 6 Q. And this is where you -- you used this as 7 an example, I think, of a peer-reviewed study that 8 looked at the impact of social media features, 9 independent of content; is that right? 10 A. Yes. 11 Q. And looked at what was causing or not 12 causing mental health outcomes; is that right? 13 A. Yes. 14 Q. Okay. Just in your description of this 15 particular study -- actually, let me -- yeah, let me 16 go back. 17 One of the -- the -- the nature and target 18 of this study was whether or not users were clicking 19 on a like; is that right? 20 A. That was one of the points that was 21 examined, yes. 22 Q. And when they clicked on a -- on a like, it 23 would take them to some other content; right? 24 A. I don't think that's necessarily true. 25 Q. Okay. Well, there's a reference here to --</p>

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<p style="text-align: right;">Page 250</p> <p>1 how about the number of links that they had clicked 2 on in the past 30 days, right, was one of the things 3 that was evaluated? 4 A. Yeah. That's different from the likes on 5 someone else's content. 6 Q. That's fair. And I apologize for the 7 question. 8 So you had an evaluation of the likes -- 9 A. M-hm. 10 Q. -- correct? 11 A. Yes. 12 Q. You also had an evaluation on clicking on 13 links that would take you to some other content; 14 right? 15 A. Yes. 16 Q. Okay. And the conclusion of that study you 17 actually reference in your report, right, where you 18 say (as read): 19 "Our models cannot identify the 20 mechanisms by which Facebook use may lead 21 to reduced well-being"? 22 Right? 23 A. Right. 24 Q. So they weren't able to determine whether 25 or not features, independent of content, was</p>	<p style="text-align: right;">Page 252</p> <p>1 Which they measure, by the way, not just as 2 time spent but the number of likes, the number of 3 status updates, the number of links, that the 4 quantities of social media interaction (as read): 5 ... "may indeed detract from more 6 meaningful real-life experiences." 7 Q. Right. 8 They don't say large quantities of social 9 media interaction independent of content may detract 10 from more meaningful life experiences; right? 11 A. Listen, they say in that same paragraph 12 that it's the level of interaction. And they're 13 clearly making a distinction between content and 14 what people are doing on the platform, and they're 15 identifying those modes of interacting on the 16 platform as the key feature of continued engagement 17 contributing to worsened mental health. 18 Q. Does interaction involve content? 19 MS. McNABB: Objection. Speculation. 20 THE WITNESS: Interaction can involve 21 content, but it's its own beast. 22 BY MR. ERCOLE: 23 Q. Okay. Have you spoken with either of the 24 authors? 25 A. No.</p>
<p style="text-align: right;">Page 251</p> <p>1 actually leading to reduced well-being? 2 MS. McNABB: Objection. Misstates. 3 THE WITNESS: My read of this article is 4 that their interpretation of their results is that 5 the content is less important than the way that 6 people are interacting on the platform. 7 BY MR. ERCOLE: 8 Q. But you -- you quote from the authors 9 themselves where they said they can't identify the 10 mechanism by which Facebook use may lead to reduced 11 well-being; right? 12 A. Yeah. But it's always the case in 13 peer-reviewed academic articles that they'll qualify 14 their conclusions and be hesitant at the same time, 15 that they will say what they really think about 16 their interpretation which then follows, which is, 17 quote (as read): 18 "Our results are in contrast to those 19 from previous research asserting that the 20 quantity of social media interaction is 21 irrelevant and that only the quality of 22 those interactions matters." 23 What they conclude is (as read): 24 "Large quantities of social media 25 interaction ..."</p>	<p style="text-align: right;">Page 253</p> <p>1 Q. Do you know whether either of the authors 2 are experts in this case? 3 A. I don't believe they are. 4 Q. Okay. If they were experts, would you have 5 wanted to speak with them to find out what they -- 6 what conclusions they reached from their study? 7 A. Yeah, if you're referring to Christakis, I 8 believe that's not the same person that's 9 coauthoring this article. 10 Q. Okay. You haven't spoken with either of 11 those authors about what -- about their findings or 12 what they meant by "our models cannot identify the 13 mechanisms by which Facebook use may lead to reduced 14 well-being"; right? 15 A. No. 16 Q. Okay. If social media were just a blank 17 page with no content, do you think that could be 18 addictive or cause harm? 19 MS. McNABB: Objection. Speculation. 20 THE WITNESS: Unlikely. 21 BY MR. ERCOLE: 22 Q. With respect to risk factors -- well, 23 actually, let me ask this: Are you aware of any 24 peer-reviewed experimental study that has evaluated 25 whether or not the features of social media,</p>

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<p style="text-align: right;">Page 254</p> <p>1 independent of content, can cause addiction? 2 MS. McNABB: Objection. Asked and 3 answered. 4 THE WITNESS: So we talked about this 5 before the break; right? 6 BY MR. ERCOLE: 7 Q. I didn't ask you this question, because I 8 double-checked. 9 A. Oh, okay. Then ask me again -- 10 Q. Sure. 11 A. -- because it sounds so much like the 12 question you asked me before. 13 Q. That's fair. 14 Are you aware of any peer-reviewed 15 experimental study that has evaluated whether or not 16 the features of social media, independent of 17 content, can cause addiction? 18 MS. McNABB: Objection. Asked and 19 answered. 20 THE WITNESS: This strikes me as so similar 21 to the question that you asked me before that I'm 22 struggling to understand it. 23 BY MR. ERCOLE: 24 Q. You don't understand my question? 25 A. It seems very similar to the question that</p>	<p style="text-align: right;">Page 256</p> <p>1 addiction, but it certainly is looking at the level 2 and types of engagement that we would care about 3 when we're trying to evaluate social media 4 addiction. So it's relevant to social media 5 addiction. 6 Q. Okay. But how about specifically designed 7 to evaluate this question of addiction? Any 8 peer-reviewed experimental study that looks at 9 whether or not the -- the features of social media, 10 independent and isolated from content, can cause 11 addiction or social media use disorder? 12 A. M-hm. Yeah. 13 MS. McNABB: Just lay an objection for 14 asked and answered. 15 THE WITNESS: Sorry, I'm looking for an 16 area in my report, and then I will answer your 17 question. 18 BY MR. ERCOLE: 19 Q. Thank you. 20 A. Okay. So if you go to page 16 of my 21 report, there is a brain imaging study by Izuma, 22 et al., which we discussed before. 23 Q. So can you just tell me where you are? 24 A. Sure. Page 16 of my report. 25 Q. Okay. Like, what paragraph?</p>
<p style="text-align: right;">Page 255</p> <p>1 you already asked me that I feel I already answered. 2 So maybe we can go back to the question you asked me 3 before that's very similar to this, the one just 4 before the break. I don't see a difference between 5 them. 6 Q. Okay. I appreciate you didn't -- you don't 7 see a difference, but I'm asking this question now. 8 So are you aware of any peer-reviewed 9 experimental study that has evaluated whether or not 10 the features of social media, independent of and 11 isolated from content, can cause addiction? 12 A. Okay. 13 MS. McNABB: Objection. 14 THE WITNESS: So we talked about Shakya and 15 Christakis -- 16 BY MR. ERCOLE: 17 Q. Yes. 18 A. -- which is a peer-reviewed study which 19 examines features of social media -- 20 Q. And -- 21 A. -- independent of content. 22 Q. I'm sorry to interrupt you. Can I -- can I 23 ask a quick -- but that didn't evaluate addiction; 24 right? 25 A. Well, it wasn't directly looking at</p>	<p style="text-align: right;">Page 257</p> <p>1 A. This is Romanette ii. 2 Q. Okay. Is that what that's called, 3 Romanette? 4 A. I think so. 5 Q. Well-done. 6 A. Okay. 7 MR. ARBITBLIT: We heard a defense lawyer 8 use that term. We had never heard it. 9 MR. ERCOLE: Okay. 10 THE WITNESS: All right. So this is an 11 imaging study that looked at -- it was a task design 12 related to acquiring a good reputation. So these 13 individuals, like, looked at images. And then the 14 design was related to whether or not other people 15 liked them or something similar. 16 And that, to my mind, is akin to likes, 17 which is an addictive design feature, independent of 18 content, showing activation, quote, robustly 19 activated reward-related brain areas and overlapped 20 with areas activated by monetary rewards. 21 Then on page 17, Romanette iii (as read): 22 "Sherman and colleagues found that 23 adolescents are more inclined to like 24 Instagram-like photos that have been 25 liked by others, and viewing these photos</p>

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<p style="text-align: right;">Page 258</p> <p>1 compared with photos that have been less 2 liked, was associated with greater 3 activity in neural regions implicated in 4 reward processing, social cognition, and 5 imitation [sic]." 6 And as I say (as read): 7 "This study highlights that the 8 crowd-sourced, interactive, reciprocal 9 nature of social media through likes and 10 other similar design features increases 11 the potency of the medium." 12 And increased potency is one of the 13 mechanisms by which -- I'm sorry, let me finish -- 14 Q. Yeah. 15 A. -- by which people get addicted to social 16 media. 17 Likewise, Romanette iv (as read): 18 "Davey and colleagues found that 19 being liked in a mode akin to social 20 media activates the brain's reward 21 pathway." 22 Which is, again, further biological 23 plausibility that social media can be addictive 24 because it activates the same reward pathway as 25 drugs and alcohol.</p>	<p style="text-align: right;">Page 260</p> <p>1 I am showing you experimental studies that 2 are specifically looking at addictive design 3 features that activate the brain's reward pathway, 4 which is important to our argument for causality 5 because they're showing that the brain reward 6 pathway is activated by -- (inaudible) 7 (Stenographer interrupted for clarification 8 of the record.) 9 THE WITNESS: -- social -- yeah, social 10 rewards and addictive design features, which is 11 fundamental to the argument that these design 12 features specifically contribute to the addictive 13 nature of social media. 14 I'd love to keep going. 15 If you look at page 18, Romanette vi, this 16 is the work of Eva Telzer. 17 BY MR. ERCOLE: 18 Q. I don't think there's a question pending, 19 Dr. Lembke. I know you want to filibust for the 20 next three hours, but -- 21 A. No, it's not filibustering [sic], I -- 22 because I have more here. 23 Q. Okay. 24 MS. McNABB: Yeah, and -- 25 ///</p>
<p style="text-align: right;">Page 259</p> <p>1 Kim, et al., is not looking specifically at 2 social media addiction, but they are looking at 3 people with Internet addiction. And to my mind, 4 that's very relevant to the discussion that we are 5 having here because many adolescents spend lots of 6 time on social media when they're on the Internet. 7 And what they find it's down-regulation of 8 postsynaptic D2 receptors in striatal regions, which 9 is consistent with the path of physiology that we 10 see -- 11 BY MR. ERCOLE: 12 Q. Dr. Lembke, I'm really -- my question was 13 specific to the issue of social media addiction, 14 which you said is defined in the medical literature. 15 Which -- just, can you identify -- I just 16 need the name of a -- of a -- of a peer-reviewed 17 study that -- experimental study that has looked at 18 features of social media, independent of content, 19 and whether or not they cause social media addiction 20 as defined in the literature? 21 MS. McNABB: Objection. Asked and 22 answered. 23 THE WITNESS: Yeah. So I -- I think I'm 24 doing a pretty good job answering your question, and 25 I'm only about halfway through.</p>	<p style="text-align: right;">Page 261</p> <p>1 BY MR. ERCOLE: 2 Q. So -- 3 MS. McNABB: -- Brian, just -- just I'm 4 going to lay an objection -- 5 MR. ERCOLE: Okay. 6 MS. McNABB: -- that it's argumentative. 7 And you interrupted Dr. Lembke while she 8 was trying to answer your question which is why 9 she's going back to finish her answer. She's 10 allowed to finish her answer. 11 MR. ERCOLE: Okay. I don't -- well, 12 there's no question pending. So ... 13 MS. McNABB: You -- 14 BY MR. ERCOLE: 15 Q. So, Dr. Lembke, let me ask -- 16 MS. McNABB: The question is withdrawn 17 then? 18 BY MR. ERCOLE: 19 Q. Let me ask this question -- 20 MR. ERCOLE: You can object. 21 BY MR. ERCOLE: 22 Q. Let me ask this question: With respect 23 to -- actually, let's go to this: You cite studies 24 in -- I think, in Section -- the last section of 25 your report, right, which starts at -- let's go to</p>

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<p style="text-align: right;">Page 262</p> <p>1 that.</p> <p>2 Sorry.</p> <p>3 So if you turn to the Section 5 of your</p> <p>4 report, I guess, Opinion 5 of your report, it is on</p> <p>5 page 79.</p> <p>6 Do you see that?</p> <p>7 A. Yes.</p> <p>8 Q. Okay. And it says (as read):</p> <p>9 "Addiction to social media can</p> <p>10 adversely affect youth mental health,</p> <p>11 particularly among those with</p> <p>12 co-occurring psychiatric disorders."</p> <p>13 Do you see that?</p> <p>14 A. Yes.</p> <p>15 Q. And in that -- in that section of your</p> <p>16 report, you cite a number of -- of different</p> <p>17 studies; right?</p> <p>18 A. Yes.</p> <p>19 Q. I am not ensteeped in the literature, as</p> <p>20 others are, but I want to just look at a couple of</p> <p>21 those studies, if that's okay with you.</p> <p>22 A. Sure.</p> <p>23 Q. And I'd actually like to start with some of</p> <p>24 the early -- like, sorry, the most recent studies</p> <p>25 that you cite in that -- in that section to take a</p>	<p style="text-align: right;">Page 264</p> <p>1 And this article was published in, it looks</p> <p>2 like, 2025, at the top at least, in Psychology of</p> <p>3 Popular Media; is that right?</p> <p>4 A. Yes.</p> <p>5 Q. Okay. And so I actually just want to go to</p> <p>6 the -- if you turn to the second page of this</p> <p>7 document. And if you go down to the second full</p> <p>8 paragraph.</p> <p>9 And this is part of the section that is</p> <p>10 sort of describing the state of the literature;</p> <p>11 right?</p> <p>12 A. M-hm.</p> <p>13 Q. And it says -- the first sentence there</p> <p>14 says (as read):</p> <p>15 "To date, the evidence for the</p> <p>16 harmful effects of heavy SMU has not been</p> <p>17 compelling."</p> <p>18 Do you see that?</p> <p>19 A. Yes, I see that.</p> <p>20 Q. Okay. And SMU refers to social media use?</p> <p>21 A. That's correct.</p> <p>22 Q. Okay. And so these authors were stating as</p> <p>23 of 2025 that the evidence for the harmful effects of</p> <p>24 heavy social media use has not been compelling;</p> <p>25 right?</p>
<p style="text-align: right;">Page 263</p> <p>1 look at what they say about the -- the literature</p> <p>2 itself.</p> <p>3 So let's ...</p> <p>4 This is ...</p> <p>5 MR. ERCOLE: What number -- exhibit are we?</p> <p>6 THE STENOGRAPHER: Eight.</p> <p>7 MR. ERCOLE: Eight.</p> <p>8 Let me show you what's -- we're marking as</p> <p>9 Exhibit 8.</p> <p>10 Thanks.</p> <p>11 (Marked for identification purposes,</p> <p>12 Lembke Exhibit 8.)</p> <p>13 BY MR. ERCOLE:</p> <p>14 Q. Dr. Lembke, this was a -- is a study that</p> <p>15 you cite from Davis and Goldfield.</p> <p>16 Do you see that?</p> <p>17 A. Yeah.</p> <p>18 Q. And it says -- and it says (as read):</p> <p>19 "Limiting Social Media Use Decreases</p> <p>20 Depression, Anxiety, and Fear of Missing</p> <p>21 Out in Youth with Emotional Distress: A</p> <p>22 Randomized Controlled Trial."</p> <p>23 Do you see that?</p> <p>24 A. Yes.</p> <p>25 Q. Sorry.</p>	<p style="text-align: right;">Page 265</p> <p>1 A. That's what it says, yes.</p> <p>2 Q. Okay. And you disagree with that</p> <p>3 conclusion; is that right?</p> <p>4 A. I mean, "compelling" is quite a vague and</p> <p>5 qualitative term. I'm not sure exactly what they</p> <p>6 mean by that.</p> <p>7 Q. Do you think that the -- do you think for</p> <p>8 litigation the evidence should be compelling?</p> <p>9 A. I think --</p> <p>10 MS. McNABB: Objection. Argumentative.</p> <p>11 THE WITNESS: I think that the totality of</p> <p>12 the evidence is convincing that social media and the</p> <p>13 defendants' platforms specifically cause mental</p> <p>14 health harms in youth.</p> <p>15 BY MR. ERCOLE:</p> <p>16 Q. Let's look at another article that you rely</p> <p>17 upon.</p> <p>18 And I'm trying to focus on the most recent</p> <p>19 ones because I think they sort of summarize where</p> <p>20 the literature is or where it's not.</p> <p>21 MS. McNABB: Objection. Speculation.</p> <p>22 THE WITNESS: Okay. Just -- sorry. Before</p> <p>23 we go on to --</p> <p>24 BY MR. ERCOLE:</p> <p>25 Q. There's no question pending, Dr. Lembke.</p>

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<p style="text-align: right;">Page 266</p> <p>1 A. Okay.</p> <p>2 Q. Your counsel can ask any questions they</p> <p>3 want to.</p> <p>4 MR. ERCOLE: What exhibit -- 9.</p> <p>5 (Marked for identification purposes,</p> <p>6 Lembke Exhibit 9.)</p> <p>7 BY MR. ERCOLE:</p> <p>8 Q. Exhibit 9 is an article by Johannes Thrul</p> <p>9 and some other folks; is that right?</p> <p>10 And you rely upon this article in your</p> <p>11 report; correct?</p> <p>12 A. Yes.</p> <p>13 Q. Okay. And this was a meta-analysis of</p> <p>14 another meta-analysis; is that correct?</p> <p>15 MS. McNABB: Objection. It misstates.</p> <p>16 THE WITNESS: This was a reanalysis of the</p> <p>17 same data that was used in a paper by Ferguson,</p> <p>18 et al.</p> <p>19 BY MR. ERCOLE:</p> <p>20 Q. Okay. And Ferguson, et al., was published</p> <p>21 in 2024; is that right?</p> <p>22 A. Yes.</p> <p>23 Q. Okay. And if you turn to this -- the</p> <p>24 abstract of this document.</p> <p>25 Do you see that?</p>	<p style="text-align: right;">Page 268</p> <p>1 is written here and the state of the evidence.</p> <p>2 There are lots of different analyses, some are</p> <p>3 well-done, some are not well-done.</p> <p>4 The whole point of the Thrul article is to</p> <p>5 show that Ferguson's meta-analysis and the claims</p> <p>6 that he made were not well-done and to redo the</p> <p>7 analysis and show what it shows when that analysis</p> <p>8 is well-done.</p> <p>9 And their findings were that social media</p> <p>10 reduction or abstinence interventions should have a</p> <p>11 minimum length of one week or longer to confer</p> <p>12 mental health benefits.</p> <p>13 What Ferguson, et al., did was included</p> <p>14 studies that had interventions that were too short</p> <p>15 to be able to see the positive effects of reducing</p> <p>16 or stopping use.</p> <p>17 So their conclusions, the Ferguson, et al.,</p> <p>18 conclusions, are not reliable for that reason.</p> <p>19 Q. Right.</p> <p>20 So just focusing on Ferguson, that study</p> <p>21 was published in 2024 in a peer-reviewed journal;</p> <p>22 correct?</p> <p>23 A. Yes, it was.</p> <p>24 Q. Okay. And that finding for Ferguson was</p> <p>25 that the social media effects were statistically no</p>
<p style="text-align: right;">Page 267</p> <p>1 A. Yes.</p> <p>2 Q. It says (as read):</p> <p>3 "A recent meta-analysis published in</p> <p>4 this journal included 27 studies that</p> <p>5 experimentally -- experimentally</p> <p>6 manipulated social media use and</p> <p>7 investigated their impact on mental</p> <p>8 health outcomes."</p> <p>9 Correct?</p> <p>10 A. That's what it says.</p> <p>11 Q. And that meta-analysis author concluded</p> <p>12 that social media effects were statistically no</p> <p>13 different from zero; right?</p> <p>14 A. Well, that's what it says. But the whole</p> <p>15 point of this article is to refute that claim.</p> <p>16 Q. Right.</p> <p>17 So as of 2024, though, there were articles</p> <p>18 being published showing that -- that for</p> <p>19 meta-analyses the social media effects were</p> <p>20 statistically no different from zero; right?</p> <p>21 A. No.</p> <p>22 MS. McNABB: Objection. Misstates.</p> <p>23 BY MR. ERCOLE:</p> <p>24 Q. Was Ferguson's article published in 2024?</p> <p>25 A. I feel like you're mischaracterizing what</p>	<p style="text-align: right;">Page 269</p> <p>1 different from zero; right?</p> <p>2 MS. McNABB: Objection.</p> <p>3 THE WITNESS: It was a poorly done study.</p> <p>4 And the Thrul, et al., study shows why and does a</p> <p>5 reanalysis.</p> <p>6 BY MR. ERCOLE:</p> <p>7 Q. Okay. And so if you look at the results</p> <p>8 here, they did a reanalysis of the same studies;</p> <p>9 correct?</p> <p>10 A. They did a reanalysis where they separated</p> <p>11 the studies that were short-term reductions, like a</p> <p>12 week or less than a week, and then studies that were</p> <p>13 longer-term reductions in use.</p> <p>14 And I'm happy to explain to you if you'd</p> <p>15 like to understand why that's so important to do.</p> <p>16 Q. Well --</p> <p>17 A. To lump those two types of studies together</p> <p>18 will lead to spurious conclusions.</p> <p>19 Q. So let's look at the results.</p> <p>20 So first, in the first sentence, Thrul</p> <p>21 initially conducted a reanalysis of all studies;</p> <p>22 right? And found the same effect size as reported</p> <p>23 in the original meta-analysis; correct?</p> <p>24 A. Yes.</p> <p>25 Q. And it was nonsignificant; right?</p>

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<p style="text-align: right;">Page 270</p> <p>1 A. What they're saying there is when they do 2 the same thing that Ferguson did, not surprisingly, 3 they get the same results. They're setting up the 4 important distinction between what Ferguson did and 5 what they did. 6 Q. And then -- they then excluded seven 7 studies, right, that were not reduction/abstinence 8 interventions? And what was the overall effect? 9 A. They say here that was also nonsignificant. 10 Q. Okay. 11 A. But when, importantly, they used studies 12 that were longer, they did see an effect. 13 Q. And one of the conclusions of this article 14 as of 2025 was that, quote (as read): 15 "More studies of various intervention 16 lengths are needed to confirm these 17 findings and strengthen the evidence in 18 this area of research, and studies need 19 to balance intervention efficacy with 20 feasibility and participant 21 acceptability." 22 Right? 23 A. Every scientific clinical study with -- 24 will conclude with a need for more studies. 25 Q. With respect to, Dr. Lembke, the risk</p>	<p style="text-align: right;">Page 272</p> <p>1 home," what are some of the factors that fall within 2 the "modeled in the home" bucket, then, that can 3 cause or contribute to addiction? 4 A. Caregivers who are themselves addicted to 5 the substance or behavior. Caregivers who are not 6 paying sufficient attention to their children, 7 neglecting -- you know, not aware of what their kids 8 are -- where their kids are or what their kids are 9 doing. All of these are risk factors for addiction. 10 Q. And how about school-related issues? Can 11 school-related issues be a cause or contributed to 12 addiction? 13 MS. McNABB: Objection. Speculation. 14 THE WITNESS: I'm not exactly sure what you 15 mean by "school-related issues." 16 BY MR. ERCOLE: 17 Q. Sure. 18 Doing well in school, not doing well in 19 school, being bullied in school, not being bullied 20 in school. Are there any school-related factors 21 that can cause or contribute to addiction? 22 MS. McNABB: Objection. Compound. 23 THE WITNESS: I think trauma more broadly 24 is a known risk factor for addiction. So if trauma 25 is happening, you know, in schools, that could put</p>
<p style="text-align: right;">Page 271</p> <p>1 factors for addiction, you've talked about -- you 2 talked about social media addiction and -- at length 3 here today. 4 What are the -- what are the risk factors 5 for addiction? 6 A. Risk factors for addiction, I generally 7 divide them into three large buckets: Nature, 8 nurture, and neighborhood. 9 So nature are inherited risk factors, 10 including co-occurring psychiatric disorders. 11 Nurturous factors are things like trauma or 12 what is modeled in the home in terms of how 13 caregivers either explicitly or implicitly condone 14 use of a certain substance or behavior or model 15 maladaptive addictive use. 16 And then neighborhood has to do with the 17 environment, the ecosystem. This is essentially 18 what I discuss at length in my book Dopamine Nation, 19 this idea that we're living in a drugified world 20 where we've made everything more accessible, more 21 bountiful, more potently reinforcing, more novel, 22 and in some cases more gamblified or gamified such 23 that even healthy behaviors can now be addictive 24 depending upon the medium. 25 Q. And what is -- when you say "modeled in the</p>	<p style="text-align: right;">Page 273</p> <p>1 someone at risk. 2 Generally school performance can be an 3 indicator of a potential addiction problem. But we 4 also see lots of kids who are doing well in school 5 and still struggling with an addiction that is 6 covert and not identified in part because they are 7 doing well in school. 8 BY MR. ERCOLE: 9 Q. How about genetic factors? How do they 10 cause or contribute to addiction? 11 A. So the family studies and the twin studies, 12 which are mainly based on alcohol use disorder, show 13 an increased risk of addiction if you have a 14 biological parent or grandparent who is addicted, 15 even if you are raised out of that substance-using 16 or addictive home. 17 Q. And so what -- meaning if -- if -- if -- 18 when you say "raised out of that substance-using or 19 addictive home," what do you mean by that? 20 A. For example, if you have a biological 21 parent who has an alcohol use disorder and you're 22 adopted at birth and raised in a family of 23 teetotalers, you are still at increased risk of 24 addiction compared to people who don't have a 25 biological parent or grandparent --</p>

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<p style="text-align: right;">Page 274</p> <p>1 Q. And --</p> <p>2 A. -- with addiction.</p> <p>3 Q. -- apart from social media, what are some</p> <p>4 of the other -- I think you mentioned -- sorry.</p> <p>5 Strike that.</p> <p>6 The last bucket I think you said was</p> <p>7 ecological factors?</p> <p>8 A. Environmental, ecological, right.</p> <p>9 Q. And apart from social media use, what are</p> <p>10 some of the other ecological factors that can cause</p> <p>11 or contribute to addiction?</p> <p>12 A. Well, access is the most important one,</p> <p>13 simple access to a drug. A behavior increases</p> <p>14 exposure and hence the risk of getting addicted to</p> <p>15 that behavior.</p> <p>16 But other ecological factors are things</p> <p>17 like poverty, unemployment, social dislocation.</p> <p>18 Q. How about abuse?</p> <p>19 A. That would be in the nurture bucket, part</p> <p>20 of the developmental history of that child.</p> <p>21 Q. How about divorce, parental divorce? Is</p> <p>22 that a risk factor?</p> <p>23 A. Potentially if it was traumatic for the</p> <p>24 child.</p> <p>25 Q. How about if one of the child's parents has</p>	<p style="text-align: right;">Page 276</p> <p>1 BY MR. ERCOLE:</p> <p>2 Q. So attention deficit disorder can be a</p> <p>3 contributing factor for addiction?</p> <p>4 A. Yes.</p> <p>5 Q. Has the -- in your view, has there been an</p> <p>6 increased use of psychiatric medication across the</p> <p>7 country?</p> <p>8 MS. McNABB: Objection. Scope.</p> <p>9 THE WITNESS: Yes.</p> <p>10 BY MR. ERCOLE:</p> <p>11 Q. And has this increased usage or</p> <p>12 prescription of psychiatric medication led to people</p> <p>13 becoming more depressed, in your view?</p> <p>14 MS. McNABB: Objection. Scope.</p> <p>15 THE WITNESS: I wouldn't say that, no.</p> <p>16 BY MR. ERCOLE:</p> <p>17 Q. So are you -- have you ever talked about</p> <p>18 whether or not the increase of psychiatric</p> <p>19 medication in the United States has created a</p> <p>20 correlation in increase in depression in the</p> <p>21 United States?</p> <p>22 MS. McNABB: Objection. Scope and</p> <p>23 foundation.</p> <p>24 THE WITNESS: I don't think that accurately</p> <p>25 characterizes my views on that matter. I have</p>
<p style="text-align: right;">Page 275</p> <p>1 been imprisoned for some reason?</p> <p>2 A. I think I would need to know the specifics</p> <p>3 of that circumstance. I wouldn't want to make a</p> <p>4 broad statement about our criminal justice system.</p> <p>5 Q. How about learning disabilities? Is that a</p> <p>6 risk factor?</p> <p>7 A. Not necessarily.</p> <p>8 Q. Can learning disabilities cause or</p> <p>9 contribute to addiction in -- in some way, depending</p> <p>10 on the circumstances?</p> <p>11 A. I'm not --</p> <p>12 MS. McNABB: Objection. Asked and</p> <p>13 answered.</p> <p>14 THE WITNESS: Yeah.</p> <p>15 I'm not aware of any evidence to support</p> <p>16 that. There may be some studies that I'm not aware</p> <p>17 of, but I don't think a learning disability per se</p> <p>18 is necessarily a risk factor.</p> <p>19 Now, if you're categorizing attention</p> <p>20 deficit disorder into the bucket of learning</p> <p>21 disabilities, which you might do, then, yes, that is</p> <p>22 certainly a risk factor. But we typically</p> <p>23 categorize that as a psychiatric disorder, not as a</p> <p>24 learning disorder.</p> <p>25 ///</p>	<p style="text-align: right;">Page 277</p> <p>1 written a book, as you mentioned and noted earlier,</p> <p>2 called Drug Dealer, MD, which talks about increased</p> <p>3 rates of prescribing of opioids and psychotropics,</p> <p>4 including antidepressants, mood stabilizers,</p> <p>5 antipsychotics --</p> <p>6 (Stenographer interrupted for clarification</p> <p>7 of the record.)</p> <p>8 THE WITNESS: -- anxiolytics.</p> <p>9 And I think that's problematic for a bunch</p> <p>10 of different reasons, which isn't to say that those</p> <p>11 medications should never be used. Obviously, I</p> <p>12 prescribe them in my professional life on a regular</p> <p>13 basis.</p> <p>14 But I don't think I've ever made the claim</p> <p>15 that increased prescribing of psychotropics causes</p> <p>16 depression. Sometimes they don't work. Sometimes</p> <p>17 there can be a neuroadaptation where in rare cases</p> <p>18 they might contribute to dysphoria in an individual</p> <p>19 as part of the varied reactions that people will get</p> <p>20 to different psychotropics.</p> <p>21 BY MR. ERCOLE:</p> <p>22 Q. Do you think they're -- opioid-related</p> <p>23 issues have caused an increase in anxiety and</p> <p>24 depression on a population level?</p> <p>25 MS. McNABB: Objection. Scope.</p>

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<p style="text-align: right;">Page 278</p> <p>1 THE WITNESS: It is well-documented that 2 people who take opioids for long periods of time, 3 especially at higher doses, are at increased risk 4 for multiple mental healthcare disorders, including 5 depression and anxiety. 6 BY MR. ERCOLE: 7 Q. With respect to -- there are -- let me 8 strike that. 9 There are different types of study designs; 10 is that fair to say? 11 A. Yes. 12 Q. And would you agree that there's like a 13 hierarchy of -- of quality study designs? 14 A. Sure. I could agree with that, yes. 15 Q. And would you agree that sort of case 16 reports and case series are on the low end of the 17 hierarchy of evidence, at least with respect to the 18 issue of causation? 19 A. I think when -- when we conceptualize the 20 scientific method, we would say that a case report 21 or a case series is trumped by other study designs. 22 But I, nonetheless, think that case reports and case 23 series are really important because they're often 24 the sentinel events when you're dealing with a new 25 disorder, including social media addiction.</p>	<p style="text-align: right;">Page 280</p> <p>1 convincing. 2 BY MR. ERCOLE: 3 Q. How many ecological studies would you need 4 to say the same thing in order for there to be that 5 type of causal finding? 6 MS. McNABB: Objection. Speculation. 7 THE WITNESS: I couldn't put a number on 8 it. 9 BY MR. ERCOLE: 10 Q. How about cross-sectional studies, 11 cross-sectional -- let me know if you agree with 12 this: Cross-sectional studies assess the 13 association between variables at one point in time? 14 A. Yes. 15 Q. And would you agree cross-sectional studies 16 can only establish correlation, not causation? 17 MS. McNABB: Objection. 18 THE WITNESS: My answer is the same. If 19 you only have one cross-sectional study, it's 20 insufficient. But if you look at the totality of 21 the evidence, you know, multiple cross-sectional 22 studies combined with longitudinal studies combined 23 with experimental studies combined with cohort 24 studies and case series and case reports and 25 clinical knowledge and defendants' internal</p>
<p style="text-align: right;">Page 279</p> <p>1 The first place that a new disease like 2 social media addiction will present is in people's 3 homes, in doctor's offices. There always is going 4 to be a delay between those sentinel events and the 5 PhD-type researchers who then put together clinical 6 trials, you know, correlational studies, case cohort 7 studies, experimental studies. There will always be 8 a delay. 9 Q. Are you aware of any peer-reviewed -- just 10 off the top of your head -- any peer-reviewed case 11 reports or case series that have looked at the issue 12 of specifically causation and social media? 13 A. I'm not aware of any as I sit here today. 14 Q. How about ecological studies? Those 15 studies track groups of people over time; is that 16 correct? 17 A. M-hm. 18 Q. And is it fair to say that ecological 19 studies can be useful for identifying associations, 20 but they don't necessarily provide causal answers? 21 MS. McNABB: Objection. Misstates. 22 THE WITNESS: I think I would disagree with 23 that. I mean, any one ecological study probably 24 isn't definitive, but if you get enough ecological 25 studies showing the same thing, then that's</p>	<p style="text-align: right;">Page 281</p> <p>1 documents, the totality of the evidence can -- can 2 provide evidence for causation. 3 BY MR. ERCOLE: 4 Q. And you would agree that the concept of 5 correlation is different from the concept of 6 causation; right? 7 MS. McNABB: Objection. 8 THE WITNESS: Yes. 9 MS. McNABB: Speculation. 10 BY MR. ERCOLE: 11 Q. And meta-analyses are another category of 12 study; is that right? 13 A. Yes. 14 Q. And would you agree that meta-analyses 15 are -- are only as good as the underlying studies 16 that are included in the meta-analysis? 17 MS. McNABB: Objection. Form. Foundation. 18 Go ahead. 19 THE WITNESS: I would say that it's not 20 just a matter of the underlying studies included. 21 It's also a matter of the way that the meta-analysis 22 was designed. 23 BY MR. ERCOLE: 24 Q. Right. 25 And so it's how the meta-analysis was</p>

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<p style="text-align: right;">Page 282</p> <p>1 designed, and then also how the underlying studies 2 being meta-analyzed were designed; correct? 3 A. Yes. 4 MS. McNABB: Objection. 5 BY MR. ERCOLE: 6 Q. Okay. And -- 7 THE WITNESS: Sorry. 8 MS. McNABB: No, that's okay. 9 BY MR. ERCOLE: 10 Q. In the -- just to go back to the -- the 11 meta-analysis in the Thrul article that we looked 12 at -- do you remember that? 13 A. Yes. 14 Q. They didn't reach any causation 15 determination in that article; right? 16 MS. McNABB: Objection. Foundation. 17 THE WITNESS: Their main contribution was 18 to show that the Ferguson meta-analysis was poorly 19 designed and hence unreliable. 20 BY MR. ERCOLE: 21 Q. They didn't reach any causation 22 determination in that article; right? 23 A. I don't believe so, no. 24 Q. Dr. Lembke, you mentioned before that you 25 have rebuttal opinions to Dr. Tucker, Dr. Kishida,</p>	<p style="text-align: right;">Page 284</p> <p>1 would need to go see the report. I'm happy to do 2 that. If you want to give me the report now, I can 3 walk through it with you and give you my rebuttal 4 opinions. 5 Q. Okay. Well, I'm asking for you -- you came 6 in here -- I didn't even know you had these rebuttal 7 opinions. So now I'm -- I'm coming in and I'm 8 asking you to articulate them for me. 9 So sitting here today, without actually 10 looking at his report, can you articulate to me what 11 rebuttal opinions you have as to Dr. Tucker? 12 A. It's difficult for me to be specific 13 without looking at the actual report. So I would 14 just like to qualify my response with that, first of 15 all. 16 Q. Sure. 17 A. And I'd be really happy to look at the 18 report and go through it in more detail. 19 But in general, all of the defendants' 20 experts' reports tried to undermine the validity of 21 the social media addiction disorder criteria. And I 22 rebut that claim based on what I've written in my 23 report. 24 In general, the defendants' experts, in my 25 opinion, are talking outside of both sides of their</p>
<p style="text-align: right;">Page 283</p> <p>1 Dr. Galván, and Dr. Auerbach; is that correct? 2 A. Yes. 3 Q. I get that list right? Is that the correct 4 list? 5 A. Yes. 6 Q. That's the correct list of experts for whom 7 you have rebuttal opinions? 8 A. Yes. 9 Q. Okay. And these opinions are opinions you 10 formulated in your head, but you haven't actually 11 submitted any type of written report that reflects 12 those rebuttal opinions; right? 13 A. That's correct. 14 Q. Okay. So let's walk through what opinions 15 you have in your head with respect to each of these 16 experts; okay? 17 How about Dr. Tucker? What rebuttal 18 opinions do you have with respect to Dr. Tucker's 19 affirmative report in the JCCP case? 20 A. I would need to see Dr. Tucker's report and 21 to go through that with you one by one to answer 22 that. 23 Q. Okay. Sitting -- sitting here now, can you 24 tell me what opinions you have as to Dr. Tucker? 25 A. Dr. Tucker has a long report, and I really</p>	<p style="text-align: right;">Page 285</p> <p>1 mouths when they say that behavioral addictions and 2 substance-related addictions are different things, 3 but then establish the validity of the DSM, which 4 has gambling disorder and Internet gaming disorder 5 it in, as well as highlighting that dopamine can be 6 released in response to all kinds of rewarding 7 behaviors. 8 For example, Dr. Galván, I think, talks 9 about how dopamine can release -- be released in 10 response to getting a compliment from somebody, with 11 which I would agree. 12 So you can't on the one hand say that these 13 behaviors are associated with dopamine release, and 14 then, on the other hand say but you can't possibly 15 get addicted to behaviors and behaviors are wildly 16 different from substances. 17 In general, I rebut defendants' claims that 18 the scientific literature doesn't support causation 19 or that the concept of reverse causation can't be 20 eliminated. I've considered causation. I've 21 considered reverse causation. And I've concluded 22 that social media use, defendants' platforms, in 23 particular, are addictive by design, and that 24 minors, youth, who use those platforms and 25 especially those who get addicted to those platforms</p>

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<p style="text-align: right;">Page 286</p> <p>1 will have adverse mental health consequences as a 2 result.</p> <p>3 So, again, rebutting their claim that 4 social media cannot cause mental health harms.</p> <p>5 I have other rebuttals, but I -- you know, 6 in broad brushstrokes, that's the essence, I 7 believe, of -- of their reports. And my report 8 clearly contradicts those claims.</p> <p>9 So what I'm trying to say is that although 10 I haven't issued a rebuttal report, nothing in a 11 rebuttal report that I would issue would contradict 12 what I've written in my report here. And the 13 essence of any rebuttal report will be -- is 14 captured in my existing report. You're not going to 15 find something wildly different in a rebuttal report 16 from me.</p> <p>17 Q. With respect to Dr. Tucker, any other 18 opinions that -- rebuttal opinions that you have 19 other than the ones that you've just identified?</p> <p>20 A. Yes, I do. I mean, I can speak to many 21 different claims that he made, but I really need to 22 look at the report and we'd have to go through it.</p> <p>23 Q. So you'd need -- for each of the defense 24 experts that you've identified, the four that you've 25 identified, you would need to understand the full --</p>	<p style="text-align: right;">Page 288</p> <p>1 The subjective experience of individuals is 2 one of the main ways that we diagnose any mental 3 health disorder. We ask people a series of 4 questions, and the way that they answer those 5 questions largely determines our diagnosis.</p> <p>6 We also have objective criteria, but those 7 subjective reports are very important and I would 8 say even central when it comes to a mental health 9 disorder. And I think anybody who has been to see a 10 psychiatrist or a therapist or mental health 11 specialist could relate to the experience of getting 12 asked a series of questions that is then filtered by 13 the clinician or getting a scale and answering 14 questions on a scale that has been added up on 15 numbers and getting that interpreted as the way that 16 mental health diagnoses occur.</p> <p>17 Auerbach also, interestingly to me, 18 makes -- actually has a whole paragraph talking 19 about the kinds of objective data that would be 20 important and necessary, specifically, you know, 21 objective numbers of people who are using the actual 22 defendants' platforms.</p> <p>23 And when I read that, I thought to myself, 24 well, that's great that he thinks that because 25 defendants' internal documents have that data, which</p>
<p style="text-align: right;">Page 287</p> <p>1 in order -- in order to understand the full extent 2 of your rebuttal opinions, we'd need to walk through 3 each of those reports; is that right?</p> <p>4 A. I feel like I answered that question 5 already. Again, my -- I think the report that I 6 have written and submitted, you won't find anything 7 that deviates from my opinion herein in a rebuttal 8 report.</p> <p>9 But in terms of the specific minutia of 10 various statements they make in their reports, I'd 11 really have to go through it. I wouldn't want you 12 at some later date -- I wouldn't want to say now 13 "that's all I would rebut," and then have you come 14 later and say, "Oh, but they said this and you 15 didn't rebut it." Right?</p> <p>16 Does that make sense?</p> <p>17 Q. Can you think of anything, sitting here 18 right now, that -- any other sort of -- at least 19 with respect to Dr. Tucker -- any other rebuttal 20 report opinions that you'd like to give?</p> <p>21 A. In Auerbach's reports and in -- and in the 22 other reports, too, they make the claim that survey 23 studies or subjective readings are insufficient to 24 make a diagnosis of social media addiction. I 25 refute that.</p>	<p style="text-align: right;">Page 289</p> <p>1 is why those documents are such a powerful 2 indictment of the addictive nature of the 3 defendants' platforms.</p> <p>4 Q. So -- and you've been talking about 5 Auerbach. My question was a little bit different.</p> <p>6 Was on --</p> <p>7 A. Was it really, though?</p> <p>8 Q. Yeah.</p> <p>9 A. Was it?</p> <p>10 Q. I can read it back to you.</p> <p>11 A. All right. Yeah, please.</p> <p>12 Q. Can you think of anything, sitting here 13 right now, that any other -- any other rebuttal 14 opinions with respect to Dr. Tucker?</p> <p>15 A. Oh, okay. That's fair.</p> <p>16 Let me think about Dr. Tucker's report.</p> <p>17 I think -- I can't recall anything specific 18 sitting here now about Dr. Tucker's report that I 19 haven't already addressed.</p> <p>20 But, again, I reserve the right to say 21 that, you know, there probably is more in there that 22 I would rebut. But, you know, I can't recall his 23 entire report from memory sitting here now.</p> <p>24 Q. Doctor, you mentioned, then -- the last 25 answer you gave was as to Dr. Auerbach; correct?</p>

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<p style="text-align: right;">Page 290</p> <p>1 A. Yes.</p> <p>2 Q. Okay. Anything else besides what you've</p> <p>3 articulated that you can think of now that would</p> <p>4 serve as a rebuttal opinion to Dr. Auerbach?</p> <p>5 A. Not sitting here right now, no.</p> <p>6 Q. How about Dr. Galván? Anything other than</p> <p>7 what you've talked about already that</p> <p>8 would -- strike that.</p> <p>9 Any other -- any opinions that you have</p> <p>10 other than what you've articulated already as --</p> <p>11 that would serve as rebuttal opinions to Dr. Galván?</p> <p>12 A. I think my impression of Dr. Galván's</p> <p>13 report was that she doesn't have expertise in</p> <p>14 addiction, doesn't really know much about addiction.</p> <p>15 And like I said, I think she contradicted herself in</p> <p>16 validating that things like compliments and other</p> <p>17 positive interactions can release dopamine, and then</p> <p>18 saying that there's no biological plausibility for</p> <p>19 social media addiction. I think that was an</p> <p>20 internal contradiction.</p> <p>21 But I can't remember anything else right</p> <p>22 now, sitting here.</p> <p>23 Q. And then, lastly, how about Dr. Kishida?</p> <p>24 Any rebuttal opinions beyond what you've articulated</p> <p>25 already with respect to Dr. Kishida's?</p>	<p style="text-align: right;">Page 292</p> <p>1 MS. McNABB: Same objection.</p> <p>2 THE WITNESS: Yeah. I mean, I'm -- sitting</p> <p>3 here now, I'm not specifically recalling their</p> <p>4 qualifications. So hard for me to speak to that.</p> <p>5 BY MR. ERCOLE:</p> <p>6 Q. But you -- I think you talked about</p> <p>7 Dr. Galván --</p> <p>8 A. I did.</p> <p>9 Q. -- and you think Dr. Galván was qualified</p> <p>10 to opine on addiction; right?</p> <p>11 MS. McNABB: And also --</p> <p>12 THE WITNESS: Those weren't my words</p> <p>13 exactly.</p> <p>14 MS. McNABB: Just --</p> <p>15 THE WITNESS: Sorry.</p> <p>16 MS. McNABB: Just another objection as</p> <p>17 calling for a legal conclusion, which is not</p> <p>18 appropriate expert testimony.</p> <p>19 But you can go ahead and answer.</p> <p>20 BY MR. ERCOLE:</p> <p>21 Q. You can answer.</p> <p>22 A. I won't answer. I mean, I don't have an</p> <p>23 answer.</p> <p>24 Q. You don't have an answer one way or the</p> <p>25 other as to whether Dr. Galván is qualified to talk</p>
<p style="text-align: right;">Page 291</p> <p>1 A. No. I -- I think that Dr. Kishida</p> <p>2 willfully misunderstood what I was doing with some</p> <p>3 simplification of language and an extended metaphor</p> <p>4 to explain to a lay audience how dopamine works in</p> <p>5 the brain. I think that his description of the</p> <p>6 circuitry for addiction and my description are more</p> <p>7 similar than not.</p> <p>8 And I also am recalling that he made,</p> <p>9 again, I think, you know, an arbitrary and unfounded</p> <p>10 distinction between substances and behaviors when it</p> <p>11 comes to addiction.</p> <p>12 Q. Anything else?</p> <p>13 A. Not that I can remember, sitting here now.</p> <p>14 Q. With respect to Dr. Kishida, do you view</p> <p>15 Dr. Kishida as a qualified expert?</p> <p>16 A. Yeah.</p> <p>17 MS. McNABB: Object --</p> <p>18 THE WITNESS: You know -- okay.</p> <p>19 MS. McNABB: Objection. And speculation.</p> <p>20 And also, she's told you she needs to see</p> <p>21 the reports.</p> <p>22 BY MR. ERCOLE:</p> <p>23 Q. I think you answered the question.</p> <p>24 How about Dr. Auerbach? You read his --</p> <p>25 you read that report, right, Dr. Auerbach's report?</p>	<p style="text-align: right;">Page 293</p> <p>1 about addiction issues?</p> <p>2 A. I don't think that I'm in a position to</p> <p>3 make judgments about your defendants' experts and</p> <p>4 whether or not they're qualified. I mean, I can</p> <p>5 make some -- I can give some impressions on where</p> <p>6 they have less expertise in my opinion, you know,</p> <p>7 when it comes to addiction. But beyond that, no,</p> <p>8 I'm not going to --</p> <p>9 Q. Do you believe --</p> <p>10 A. -- opine on that.</p> <p>11 Q. Okay. Are any -- based upon your</p> <p>12 knowledge, expertise, are any of the defendants'</p> <p>13 experts in your view not qualified to opine on</p> <p>14 addiction issues?</p> <p>15 A. I mean, I'd rather not answer that. I</p> <p>16 don't really want to cast judgment on, you know,</p> <p>17 other experts. I -- I have had limited exposure.</p> <p>18 All I've read of their work is their reports and</p> <p>19 then in some cases some of the papers they've</p> <p>20 authored.</p> <p>21 Q. Okay. Unfortunately, we're at a</p> <p>22 deposition, so you can't just decline to answer a</p> <p>23 question.</p> <p>24 A. Okay.</p> <p>25 Q. So let me ask the --</p>

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<p style="text-align: right;">Page 294</p> <p>1 MS. McNABB: Objection. She did answer. 2 She told you what she thinks. 3 MR. ERCOLE: No. 4 MS. McNABB: She also has asked for the 5 reports. 6 MR. ERCOLE: In fact -- 7 MS. McNABB: She's answered to the best of 8 her ability. 9 MR. ERCOLE: The answer was -- 10 MS. McNABB: That's all she's required to 11 do in a deposition. 12 MR. ERCOLE: I didn't mean to talk over 13 you. 14 The answer was, "I mean, I would rather not 15 answer that," was -- was the answer. 16 MS. McNABB: And then she said, "And I 17 don't" -- okay. And then she said, "I have limited 18 exposure. All -- all the reading of their work is 19 their reports and then some of -- cases -- some of 20 the papers they've authored." 21 So she's, again, saying "I've had limited 22 exposure." 23 She's asked you for the reports, and you 24 haven't provided them to her. So she can answer to 25 the best of her ability, but she's answered your</p>	<p style="text-align: right;">Page 296</p> <p>1 THE WITNESS: I think the content is more 2 similar than not, especially as all of defendants' 3 platforms are progressing to infinite scroll of 4 short-form video. 5 BY MR. ERCOLE: 6 Q. The content -- so, Dr. Lembke, just so I 7 understand, so I can -- my notes are clear, your 8 testimony is that the content of all of the 9 defendants' social media platforms is the same? 10 MS. McNABB: Objection. Misstates prior 11 testimony. 12 THE WITNESS: That's not what I said. 13 BY MR. ERCOLE: 14 Q. Is it the same? 15 MS. McNABB: Objection. Form. 16 THE WITNESS: There's overlap in terms of 17 the medium. The media between the four defendants' 18 platforms are looking more and more similar. They 19 have very similar addictive design features. 20 They're competing and adapting with each other, 21 going to the sort of vertical, phone-based, 22 short-form video, which is so addictive. And 23 they're doing that presumably to get market share. 24 So they're different, but I would say 25 they're more similar than not.</p>
<p style="text-align: right;">Page 295</p> <p>1 question. 2 MR. ERCOLE: Okay. She hasn't, so let me 3 ask it again. 4 BY MR. ERCOLE: 5 Q. One way or the other, sitting here today, 6 do you -- in your view, are any of the defendants' 7 experts, who -- reports that you looked at, are any 8 of those experts not qualified to opine on addiction 9 issues? 10 MS. McNABB: Objection. Calls for legal 11 opinion. And asked and answered. 12 THE WITNESS: Yeah, I don't believe that 13 I'm in a position to make those judgments. 14 BY MR. ERCOLE: 15 Q. Okay. Fair enough. 16 Dr. Lembke, I know you've testified before 17 that the social media platforms in this case have 18 similar features; is that correct? 19 A. Yes. 20 Q. They also have different features too; 21 right? 22 A. Yes. 23 Q. And they also offer different content to 24 users; correct? 25 MS. McNABB: Objection. Scope.</p>	<p style="text-align: right;">Page 297</p> <p>1 BY MR. ERCOLE: 2 Q. Do you recall my question, Dr. Lembke? 3 MS. McNABB: Objection. Argumentative. 4 THE WITNESS: Can you ask it again? 5 BY MR. ERCOLE: 6 Q. Sure. 7 Is the -- the content available on social 8 media platforms the same or does it differ? 9 MS. McNABB: Objection. Scope. 10 THE WITNESS: I mean, in many ways, as I've 11 said, the content is irrelevant because the medium 12 is what makes it addictive, and the medium is 13 similar. 14 If you're asking me, can you see the same 15 videos on TikTok as you can see on YouTube -- is 16 that what you're asking me? 17 BY MR. ERCOLE: 18 Q. My question, I thought, was fairly simple, 19 which is, if a user goes on YouTube, is that user 20 going to see the same content as that user is going 21 to interact with on Facebook? 22 MS. McNABB: Objection. Scope. 23 THE WITNESS: When it comes to Instagram 24 reels, YouTube Shorts, TikTok, Snapchat Spotlight, 25 my understanding is that there's a lot of spillage</p>

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<p style="text-align: right;">Page 298</p> <p>1 in content that people can post, will post that 2 similar or same content on all of those platforms or 3 on multiple platforms. 4 So it's not identical content, but there's 5 a lot of similar content. 6 BY MR. ERCOLE: 7 Q. Dr. Lembke, the various defendants' 8 platforms provide different content; right? 9 MS. McNABB: Objection. Asked and 10 answered. She just gave you the answer. 11 MR. ERCOLE: She didn't, actually. 12 MR. ARBITBLIT: She did, actually. 13 MR. ERCOLE: First of all, there's one 14 person that's allowed to respond. 15 MR. ARBITBLIT: Comment withdrawn. 16 MR. ERCOLE: Thank you. 17 BY MR. ERCOLE: 18 Q. So let me ask my question. If you want to 19 say it's the same answer, fine, and we'll just deal 20 with the record as it is. 21 But would you agree, yes or no, the various 22 defendants' platforms provide different content? 23 MS. McNABB: Objection. Asked and 24 answered. 25 THE WITNESS: I already answered that</p>	<p style="text-align: right;">Page 300</p> <p>1 learn how to do math problems, for instance; right? 2 MS. McNABB: Objection. 3 THE WITNESS: It does have content like 4 that, but I think that the jury is out on whether or 5 not that's really an optimal way for kids to learn. 6 It is the way that kids are getting 7 information, but I haven't seen any evidence that 8 kids are actually learning in that way. 9 BY MR. ERCOLE: 10 Q. Do schools across the country use YouTube 11 to help teach kids? 12 MS. McNABB: Objection. Speculation. And 13 foundation. 14 THE WITNESS: Let me reference my report 15 here. 16 If you go to ... 17 So YouTube's own internal documents -- 18 sorry, this is page 65 of my report. I cite to 19 YouTube's own internal documents highlighting how 20 watching YouTube can contribute to, quote, decreased 21 attention span, unquote. 22 These internal documents hypothesize that 23 inattention are -- or cognitive deficits -- are 24 related to the fact that, quote (as read): 25 "Electronic media exposure is</p>
<p style="text-align: right;">Page 299</p> <p>1 question. 2 BY MR. ERCOLE: 3 Q. You can't answer that "yes" or "no"? 4 MS. McNABB: Objection. Asked and 5 answered. 6 THE WITNESS: I answered the question. 7 BY MR. ERCOLE: 8 Q. Can you -- all right. I'll ask another 9 question. 10 Can you answer the question I just asked 11 "yes" or "no"? 12 MS. McNABB: Same objection. 13 THE WITNESS: I think I answered it "yes" 14 or "no." I can't remember the exact phrasing. 15 BY MR. ERCOLE: 16 Q. Okay. Let's focus on YouTube. 17 YouTube has educational content; correct? 18 A. I mean, how are you defining "educational"? 19 Q. How about this: Does YouTube have 20 educational content, in your view? 21 A. YouTube has a lot of information on it. 22 Whether or not people are getting educated with that 23 information, I think it depends on the specific 24 whatever it is and how they're using it. 25 Q. YouTube has content that allows kids to</p>	<p style="text-align: right;">Page 301</p> <p>1 fast-paced; changes focus rapidly and 2 grabs viewer's attention; makes it 3 difficult to pay attention in less 4 stimulating settings (work, school)." 5 Pointing to the problematic YouTube among 6 kids and its negative impact on school performance. 7 YouTube's internal documents acknowledge 8 that blue light from screens and sleep deprivation 9 can result in lower academic performance in 10 student/teens. 11 And then to directly address your question 12 (as read): 13 "YouTube internal documents describe 14 how YouTube can lead to impulsive 15 behaviors, distraction, procrastination, 16 and problematic -- and is problematic for 17 self-learning. YouTube documents admit 18 that, quote, schools block Facebook 19 because it's not educational, unquote. 20 Nonetheless, the YouTube EDU project is 21 geared toward increasing, quote-unquote, 22 watch time, quote, more EDU content 23 equals more watch time per user." 24 And, again, I have not seen any evidence 25 that YouTube EDU promotes learning. In fact,</p>

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<p style="text-align: right;">Page 302</p> <p>1 according to YouTube's own internal documents, 2 quote, More than 70 percent of schools in the U.S. 3 block YouTube, unquote. And that was in 2012. 4 BY MR. ERCOLE: 5 Q. Is it your testimony that as a matter of 6 fact 70 percent of schools in the country block 7 YouTube? 8 A. Well, that's what it says in this document 9 that I've cited. 10 Q. Who created that document? 11 A. That's a Google document. 12 Q. Right. 13 Who authored it? 14 A. I'd have to look at the document again. 15 Q. Do you understand -- was it a draft 16 document? 17 A. I don't believe so, no. It was an internal 18 document and YouTube's own analysis of its impact on 19 education and its own strategizing to try to get 20 YouTube into schools and noting that schools 21 blocking YouTube is an obstacle to doing that. 22 Q. Are you aware that some internal documents 23 can be draft documents? 24 A. Yes. 25 MS. McNABB: Objection.</p>	<p style="text-align: right;">Page 304</p> <p>1 MS. McNABB: Objection. Misstates 2 testimony. 3 THE WITNESS: Oh, sorry. Sorry. I take 4 that back. Right. 5 He works for Meta, obviously. 6 Who am I thinking of for YouTube? 7 Give me a second. 8 Okay. So it looks like I reviewed the 9 deposition of Fred Gilbert, the name that you 10 mentioned at the beginning of the deposition today 11 that I didn't recognize. 12 I don't have anything more to say. 13 Is there a question pending? 14 BY MR. ERCOLE: 15 Q. You were skimming through your report and 16 offering stuff. 17 So is Fred Gilbert the only YouTube 18 deposition that you looked at in forming your 19 opinion? 20 A. I don't recall sitting here right now. 21 Q. Who is Fred Gilbert? 22 A. I don't remember. 23 Q. And in forming your opinions, I'll 24 represent to you that you cited 41 YouTube documents 25 on your Materials Considered list.</p>
<p style="text-align: right;">Page 303</p> <p>1 BY MR. ERCOLE: 2 Q. Do you know who that document was shared 3 with at YouTube? 4 A. I'd have to look at it again to answer that 5 question. 6 Q. Do you know whether any steps were taken 7 based upon that document? 8 MS. McNABB: Objection. Form. 9 THE WITNESS: I'd have to look again at the 10 document to answer that question. 11 BY MR. ERCOLE: 12 Q. Did you -- did you review any deposition 13 testimony about that document? 14 A. I can't recall, sitting here now. 15 Q. Sitting here now, can you identify a single 16 YouTube deposition that you reviewed? 17 MS. McNABB: Objection. Form. 18 THE WITNESS: Yes. 19 BY MR. ERCOLE: 20 Q. Who? What deposition? 21 A. I reviewed Mark Zuckerberg's deposition. I 22 reviewed Elena Davis's deposition. I believe I 23 reviewed other YouTube depositions as well. 24 Q. And your understanding is Mark Zuckerberg 25 works for YouTube?</p>	<p style="text-align: right;">Page 305</p> <p>1 Does that sound correct? 2 A. I believe you. I didn't count them. 3 Q. Do you know how many documents YouTube has 4 produced in this case? 5 A. No. 6 Q. Do you know how many pages of documents 7 YouTube has produced in this case? 8 A. No. 9 Q. In your report itself, you cite to 18 10 internal YouTube documents. 11 Does that sound right? 12 A. I didn't count them. 13 Q. With respect to those documents, are you 14 aware of any of the circumstances behind the 15 creation of those documents? 16 A. Whenever I review a document, I look at 17 where it came from, who authored it, the date. I 18 try to find out the circumstance in which it was 19 used, if it cites data. I try to get ahold of, you 20 know, more information. 21 So I do my due diligence, but many times 22 these documents don't come contextualized. So it's 23 hard to know. 24 Q. The contextualization comes with the 25 deposition testimony, right, oftentimes?</p>

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<p style="text-align: right;">Page 306</p> <p>1 MS. McNABB: Objection. Speculation. 2 THE WITNESS: Possibly. 3 BY MR. ERCOLE: 4 Q. Is it helpful -- you asked for 5 depositions -- 6 A. Yes. 7 Q. -- in this case; right? 8 A. M-hm. 9 Q. And you asked for depositions to help 10 understand the context of documents; is that right? 11 MS. McNABB: Objection. Misstates prior 12 testimony. 13 (Stenographer interrupted for clarification 14 of the record.) 15 THE WITNESS: Depositions can be helpful in 16 understanding the context. 17 BY MR. ERCOLE: 18 Q. And with respect to the YouTube documents, 19 the only deposition that you recall looking at is 20 Fred Gilbert, whose title you don't know sitting 21 here today; right? 22 A. I don't recall. That's right. 23 And I didn't feel I needed to -- to me, 24 the -- the YouTube documents I -- I reviewed spoke 25 for themselves. I didn't feel like they needed to</p>	<p style="text-align: right;">Page 308</p> <p>1 authors intended or meant in those documents? 2 MS. McNABB: Same objection. 3 THE WITNESS: I only ask for deposition 4 testimony if it warrants it. I don't feel I need 5 more information, then I don't ask for it. 6 BY MR. ERCOLE: 7 Q. Did you evaluate who within YouTube saw the 8 various documents you cited in your report? 9 A. Sometimes the individuals are listed who 10 are involved on a given committee, for example. But 11 sometimes they're not. 12 Q. Did you evaluate whether there were other 13 groups within YouTube that agreed with or disagreed 14 with what was being said in those documents? 15 MS. McNABB: Objection. Form. 16 THE WITNESS: I mean, I did my best to 17 evaluate those various contingencies when that 18 information was available or when I think it was 19 warranted. 20 BY MR. ERCOLE: 21 Q. Did you ask for information from counsel as 22 to whether there were groups within YouTube that 23 agreed with or disagreed with the documents that you 24 were citing here? 25 MS. McNABB: Objection. Objection to form</p>
<p style="text-align: right;">Page 307</p> <p>1 be further contextualized. 2 Q. With respect to the documents, do you know 3 when the documents were created for YouTube 4 documents? 5 A. Each YouTube document was created at a 6 different date and time, and I often looked at the 7 dates and times. Sometimes I include dates in my 8 report. Sometimes I don't. 9 Q. Do you know -- did you review any 10 deposition testimony to understand what the authors 11 intended with respect to any of those YouTube 12 documents? 13 MS. McNABB: Objection. Asked and 14 answered. 15 THE WITNESS: I feel like I -- I answered 16 that. 17 BY MR. ERCOLE: 18 Q. You can -- I don't think you -- we may have 19 a disagreement about that. So if you don't mind 20 answering again. 21 A. Can you ask it again? 22 Q. Sure. 23 With respect to those YouTube documents 24 that you reference in your report, did you review 25 any deposition testimony to understand what the</p>	<p style="text-align: right;">Page 309</p> <p>1 and to the extent it would call for attorney-client 2 privilege. 3 But you can answer the question "yes" or 4 "no" or to the extent you know. 5 THE WITNESS: Again, I would just answer by 6 saying, I try my best to do my due diligence to 7 evaluate the documents. 8 BY MR. ERCOLE: 9 Q. For the documents that are identified as 10 YouTube documents in your report, do you have a list 11 somewhere of all the people within YouTube that saw 12 those documents? 13 A. I don't have a list, and I'm not really 14 sure a list is relevant. What's relevant is that 15 these are official YouTube documents making claims 16 about YouTube's product which are very important to 17 this case. 18 Q. With respect to any of the documents that 19 you've referenced as to YouTube, are you aware of 20 whether or not any of the statements or findings in 21 those documents were implemented in some way, shape, 22 or form? 23 A. Most of these documents are discussing 24 design features that are already part of the 25 platform.</p>

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<p style="text-align: right;">Page 310</p> <p>1 Q. With respect to the documents that are 2 YouTube documents in your report, if I were to ask 3 you about a -- well, let me rephrase that. 4 If I were to ask you about a specific -- 5 point you to a specific document that you reference 6 in your report that's a YouTube document, would you 7 be able to tell me about the circumstances by which 8 that document was created? 9 MS. McNABB: Objection. Speculation. 10 If you want to point her to a document, 11 just show her the document, and she can give you her 12 analysis of it. 13 THE WITNESS: What she said. 14 MS. McNABB: You can answer if you want. 15 THE WITNESS: Yeah, can you -- if you show 16 me a specific document. 17 BY MR. ERCOLE: 18 Q. Well, I'm just asking any of the documents. 19 A. M-hm. 20 Q. If I were -- can you identify for me one 21 document that's a YouTube document where you could 22 explain to me the circumstances behind its creation? 23 A. Well, the documents are varied; right? 24 Some of the documents are e-mail exchanges and -- 25 and in that context, you can say clearly it came</p>	<p style="text-align: right;">Page 312</p> <p>1 Foundation. Argumentative. 2 THE WITNESS: No, I don't. 3 MS. McNABB: Brian, can we take a break? 4 MR. ERCOLE: Yeah, sure. 5 THE VIDEOGRAPHER: The time is 4:26. We're 6 off the record. 7 (Recess taken from 4:26 to 4:49.) 8 THE VIDEOGRAPHER: The time is 4:49. We're 9 back on the record. 10 BY MR. ERCOLE: 11 Q. Dr. Lembke, we were talking a bit about 12 YouTube. 13 Are you aware of whether therapists 14 recommend to patients use of YouTube to help with 15 mental health issues? 16 A. When you say "are you aware," do you mean 17 do I think that that generally might happen or do 18 you -- 19 Q. Yeah, sure. 20 Do you know whether therapists recommend 21 YouTube videos to patients to help with mental 22 health issues? 23 MS. McNABB: Objection. Speculation. 24 THE WITNESS: I think it's possible, yeah. 25 ///</p>
<p style="text-align: right;">Page 311</p> <p>1 from this person and it went to those people on that 2 date. 3 Some of the documents are PowerPoint 4 presentations or other presentations that are put 5 together by individuals employed by YouTube and 6 communicated with other individuals at YouTube. 7 Sometimes it's possible to tell, you know, who it 8 was communicated to, other times not. 9 I actually don't think that that's 10 particularly important. To me, what is of essence 11 here is what the documents say about YouTube 12 internal knowledge of the harms caused by their 13 social media platform, especially to kids. And 14 frankly, it's shocking and horrific. 15 Q. Dr. Lembke, let me ask you this: Do you 16 think that in -- by -- in formulating your opinions 17 that -- I'll strike that. 18 Given that you only reviewed 41 YouTube 19 documents out of hundreds of thousands of documents 20 that have been produced and only looked at one 21 deposition of one YouTube person whose name -- whose 22 title you don't -- can't remember, do you think you 23 cherry-picked the documents and -- and information 24 in formulating your YouTube opinions here? 25 MS. McNABB: Objection to form.</p>	<p style="text-align: right;">Page 313</p> <p>1 BY MR. ERCOLE: 2 Q. Have you ever done that? 3 A. I might have done, yeah, if there's a 4 YouTube video that sort of summarizes a bit of 5 knowledge that I think would be helpful for them. 6 Q. Do you recall what the video was that you 7 recommended to one of your patients? 8 A. No. 9 Q. Do you know whether other treaters within 10 the clinics you work at recommend YouTube videos to 11 patients to help with mental health issues? 12 MS. McNABB: Objection. Speculation. 13 THE WITNESS: I don't know. 14 (Discussion off the stenographic record.) 15 BY MR. ERCOLE: 16 Q. Do you use YouTube for any educational 17 purposes? 18 A. Sometimes. 19 Q. What educational -- 20 A. I mean -- 21 Q. -- purposes? 22 A. -- we were talking earlier about education 23 and learning and whether what's happening when 24 people watch YouTube is really learning or whether 25 it's just sort of information without the necessary</p>

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<p style="text-align: right;">Page 314</p> <p>1 processing for learning.</p> <p>2 So given that, you know, I -- as I said at</p> <p>3 the beginning, I watch YouTube videos for</p> <p>4 entertainment. I watch YouTube videos for some</p> <p>5 news.</p> <p>6 I try -- I really try hard to limit my</p> <p>7 YouTube use.</p> <p>8 Q. How about how-to videos? Do you ever use</p> <p>9 YouTube for how-to videos?</p> <p>10 A. Yes.</p> <p>11 Q. And how often do you watch YouTube?</p> <p>12 A. Probably two to three times a week.</p> <p>13 Q. And when you go on YouTube, do you search</p> <p>14 for particular types of content?</p> <p>15 A. So, yes, I've recently discovered that</p> <p>16 there's a default mode where instead of</p> <p>17 recommending -- or I don't know if it's a default</p> <p>18 mode. There's a mode on YouTube where it doesn't</p> <p>19 recommend any videos. You have to search for what</p> <p>20 you want, which is much better, I found, for</p> <p>21 preventing mindless viewing, which I am also</p> <p>22 vulnerable to.</p> <p>23 Q. And you don't -- you -- I think you</p> <p>24 testified you don't have a YouTube account; is that</p> <p>25 correct?</p>	<p style="text-align: right;">Page 316</p> <p>1 A. My interviews -- many of my interviews are</p> <p>2 broadcast on YouTube. I'm not posting those, but</p> <p>3 they are being posted by others.</p> <p>4 Q. And I think your CV cites 17 media</p> <p>5 appearances of you speaking about addiction for</p> <p>6 which you cited YouTube as the means for someone to</p> <p>7 watch it; right?</p> <p>8 A. I believe you. I didn't count it.</p> <p>9 Q. And do you think by -- by giving you a</p> <p>10 platform for your interviews to be -- interviews</p> <p>11 about addiction to be shared, would you agree that</p> <p>12 YouTube has allowed you to help others battling</p> <p>13 addiction?</p> <p>14 MS. McNABB: Objection.</p> <p>15 THE WITNESS: I hope so. And as I've made</p> <p>16 clear before, you know, medium can have benefits.</p> <p>17 It's the question of whether or not the harms</p> <p>18 outweigh the benefits, especially when we're talking</p> <p>19 about kids.</p> <p>20 BY MR. ERCOLE:</p> <p>21 Q. Have you ever uploaded any videos to</p> <p>22 YouTube?</p> <p>23 A. No.</p> <p>24 Q. You are -- do you know that you're featured</p> <p>25 in videos on YouTube Shorts?</p>
<p style="text-align: right;">Page 315</p> <p>1 A. I do not have a YouTube account, that's</p> <p>2 correct.</p> <p>3 Q. And so if you go -- go to YouTube in a</p> <p>4 logged-out state and want to watch a video, you have</p> <p>5 to provide some information about the content of the</p> <p>6 video you want to watch; right?</p> <p>7 A. Yeah, I have to do a search for a -- for a</p> <p>8 particular type of video. That's right.</p> <p>9 Q. And when you watch YouTube on the instances</p> <p>10 where -- strike that.</p> <p>11 On the days where you watch YouTube, how</p> <p>12 often will you watch YouTube?</p> <p>13 A. Just once typically at the end of the day.</p> <p>14 Q. And for how long?</p> <p>15 A. It varies. My intention is to watch no</p> <p>16 more than about half an hour, but sometimes I get</p> <p>17 caught in the addictive design features. And I can</p> <p>18 watch up to three or four hours sometimes, which I</p> <p>19 almost always regret.</p> <p>20 Q. Do you think you're addicted to YouTube?</p> <p>21 A. No. But I think that I use too much</p> <p>22 YouTube, and I -- I could become addicted to</p> <p>23 YouTube.</p> <p>24 Q. You've used YouTube to help share your</p> <p>25 research with the public; right?</p>	<p style="text-align: right;">Page 317</p> <p>1 A. I was not aware of that.</p> <p>2 Q. Do you know that Stanford University made a</p> <p>3 YouTube Short of your role at the Stanford School of</p> <p>4 Medicine?</p> <p>5 A. I know that they made a video recently on</p> <p>6 the faculty profile, but I did not know they posted</p> <p>7 it on YouTube Shorts.</p> <p>8 Q. Are you going to ask them to take that</p> <p>9 down?</p> <p>10 A. No.</p> <p>11 Q. Do you know -- are you aware that there are</p> <p>12 over 50 YouTube Shorts of you available on YouTube?</p> <p>13 A. I wasn't --</p> <p>14 MS. McNABB: Objection. Foundation.</p> <p>15 THE WITNESS: Yeah. I wasn't aware. And</p> <p>16 frankly, I think it's irrelevant to the discussion</p> <p>17 here, because as I've said before, it's not the</p> <p>18 content. It's the addictive design features.</p> <p>19 BY MR. ERCOLE:</p> <p>20 Q. Right.</p> <p>21 So even though you believe that YouTube is</p> <p>22 addictive and even though you have videos of</p> <p>23 lectures and other content on YouTube, you don't</p> <p>24 believe you need to take any steps to remove those</p> <p>25 videos from YouTube?</p>

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<p style="text-align: right;">Page 318</p> <p>1 A. I've been very public about my opinions 2 regarding kids and that we do need guardrails to 3 prevent kids from accessing addictive social media 4 platforms, especially when you're talking about 5 under 13 and even, you know, older in some cases. 6 The way I think about addictive social 7 media is the way I think about any other legal drug. 8 So I'm not out there advocating that, you know, we 9 ban sales of alcohol. Alcohol is a highly addictive 10 drug. Most people who consume alcohol will not get 11 addicted to alcohol, and there are some benefits to 12 consuming alcohol. Alcohol is a social lubricant. 13 Alcohol is recreational fun. 14 But it's very clear that a subset of 15 individuals who use alcohol will be harmed by 16 alcohol use and will get addicted to alcohol. And 17 the same thing is true for YouTube. 18 Q. And could someone get addicted to and be 19 harmed, in part, by watching your podcasts and other 20 content on YouTube? 21 A. It's theoretically possible because, again, 22 the harm is not primarily the content. The harm is 23 the recursive feedback loop that gets people caught 24 in the out-of-control use, the compulsive use, the 25 craving, and the use -- continued use despite</p>	<p style="text-align: right;">Page 320</p> <p>1 THE WITNESS: I mean, I benefit in the 2 sense that my mission is to help people by educating 3 them about addiction. And in doing that, in being 4 able to do that, yes, I benefit from that. 5 BY MR. ERCOLE: 6 Q. You get publicity from that, right, too? 7 MS. McNABB: Objection. 8 THE WITNESS: That's not my goal; but, yes, 9 that has also happened. 10 BY MR. ERCOLE: 11 Q. And with respect to any videos or content 12 involving you that has been uploaded or shared on 13 social media, have you ever requested that there be 14 some disclosure associated with that content? 15 MS. McNABB: Objection to foundation -- or 16 form. 17 THE WITNESS: I'm not really, you know, in 18 a position to do that, so I haven't done that. 19 BY MR. ERCOLE: 20 Q. Right. 21 A. But the content -- 22 Q. Sorry. 23 A. -- of what I talk about in some of these 24 appearances is the harms of social media. So 25 indirectly I am warning people about the dangers of</p>
<p style="text-align: right;">Page 319</p> <p>1 consequences. 2 Q. You haven't taken any steps to prevent 3 content that you created from being uploaded to 4 YouTube; correct? 5 A. That is correct. 6 Q. And, in fact, you haven't taken any steps 7 to prevent content that you have created from being 8 uploaded or shared on any other social media 9 platform; correct? 10 MS. McNABB: Objection. Foundation. 11 THE WITNESS: That is correct. 12 BY MR. ERCOLE: 13 Q. And some of the content that has been 14 uploaded on -- and strike that. 15 Some of the content that has been uploaded 16 or shared on social media involves the 17 Dopamine Nation book that you authored; correct? 18 MS. McNABB: Objection. Foundation. 19 THE WITNESS: Yes. 20 BY MR. ERCOLE: 21 Q. And you benefit from the publicity you get 22 by having content about Dopamine Nation displayed or 23 shared on social media; correct? 24 MS. McNABB: Objection. Foundation. 25 Speculation.</p>	<p style="text-align: right;">Page 321</p> <p>1 social media. 2 Q. But have you ever reached out, for 3 instance, to YouTube to say, "Hey, there's lots of 4 Shorts of me on YouTube. There's lots of videos for 5 me on YouTube. You should put some disclosure in 6 connection with those videos that say "Warning, you 7 know, watching these videos may lead to addiction"? 8 A. No, I haven't done that. 9 Q. And you haven't asked for YouTube to take 10 down any of those videos; right? 11 MS. McNABB: Objection. Asked and 12 answered. 13 THE WITNESS: I haven't -- I haven't done 14 that. 15 I do think it's YouTube's responsibility as 16 the owner and operator of YouTube platform to warn 17 people about the addictive nature of YouTube. I 18 don't really think that's primarily my 19 responsibility. And I feel that a lot of the work 20 that I do and the speaking and the writing that I do 21 is advocating for those kinds of warnings. 22 So there are many different ways to get at, 23 you know, what you're describing. 24 BY MR. ERCOLE: 25 Q. Sure.</p>

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<p style="text-align: right;">Page 322</p> <p>1 Social media addiction is treatable; 2 correct? 3 A. Yes. 4 Q. And in your -- in your clinical experience, 5 psychiatric improvements occur within three to 6 four weeks of abstinence from social media; is that 7 correct? 8 A. In about 80 percent of individuals who 9 abstain from social media for three to four weeks, 10 we see significant improvements, yes. 11 Q. And is the solution pretty straightforward 12 that you have to limit your dopamine intake? 13 MS. McNABB: Objection. Vague. 14 THE WITNESS: I mean, dopamine used in that 15 way is really metaphorical, you know, where that's 16 an oversimplification, as I've often said. Dopamine 17 has become a sort of meme for describing an 18 addictive drug. Dopamine is not itself addictive. 19 It's a chemical we make in our brain that signals a 20 "go, approach" response to a stimulus as opposed to 21 a "stop, withdraw" response. 22 So, you know, if I used that language, I 23 used it in a metaphorical, colloquial way. 24 BY MR. ERCOLE: 25 Q. Well, you've actually repeatedly used</p>	<p style="text-align: right;">Page 324</p> <p>1 feeling better, feeling less craving, less FOMO, and 2 less anxious, less depressed, getting more sleep, 3 having more time to do other things. 4 And then we assess how they're doing. And 5 then we talk about, you know, what to do going 6 forward. If it's a child or a teen, we almost 7 always involve family in that discussion and we try 8 to talk about, you know, whether it makes sense to 9 try to go back to using social media in moderation, 10 obviously, or whether the individual should continue 11 to abstain. 12 Q. And you've reported on podcasts and other 13 places that approximately 80 percent of people will 14 be improved or completely freed of their symptoms of 15 depression and anxiety by engaging in this type of 16 dopamine fast; is that correct? 17 MS. McNABB: Objection. Foundation. 18 THE WITNESS: What we see clinically is 19 that individuals who are willing and able to abstain 20 from their drug of choice, including social media 21 for 4 weeks, about 80 percent of them feel 22 significantly better. 23 It's not like their addiction is cured. As 24 I state, addiction is a chronic, relapsing and 25 remitting disorder. But that period of abstinence</p>
<p style="text-align: right;">Page 323</p> <p>1 the -- the phrase "dopamine fast"; correct? 2 A. That's true. Again, as a colloquial term. 3 Q. And the "dopamine fast" is what you've 4 talked about as a way of -- of treating social media 5 addiction; correct? 6 A. Right. But I'm just emphasizing that when 7 asked to talk about the neuroscience and talk about 8 dopamine, I try to clarify that it's not that 9 dopamine is good or bad or that we get addicted to 10 dopamine per se. 11 And the dopamine fast is just a commonly 12 understood lingo for an abstinence trial. 13 Q. And -- and when you say -- so when you 14 recommend a dopamine fast, what does that entail for 15 someone who has social media addiction in your view? 16 A. That entails giving up social media for 17 four weeks. 18 Q. And then what happens after that four-week 19 period? 20 A. We do an assessment of how the individual 21 is feeling, how they felt initially. Most often 22 people feel worse before they feel better as they go 23 into some degree of withdrawal from social media. 24 But the longer they can abstain, the more 25 likely they are to get to a place where they're</p>	<p style="text-align: right;">Page 325</p> <p>1 is the amount of time typically that people need in 2 order to see what they feel like when they're not 3 constantly on social media. 4 So when we're caught in those addictive 5 behaviors, it's really hard to see cause and effect 6 because it can feel like social media is 7 self-medicating anxiety and depression when, in 8 fact, in many instances it's actually making those 9 symptoms worse. 10 So by abstaining for long enough, going 11 through the withdrawal phase, resetting reward 12 pathways, individuals often feel much better not 13 using. And then they have the motivation either to 14 continue to abstain, or if they're going to go back 15 to using, to go back to using with guardrails and 16 trying to use less. 17 BY MR. ERCOLE: 18 Q. And just so that, you know, my notes and 19 the record is clear, you said it's about 80 percent 20 of people fall within that bucket of getting better 21 after the 30-day dopamine fast? 22 A. Yeah, in my clinical experience, that's 23 right. 24 Q. And are there -- after this 30-day dopamine 25 fast for your patients who you believe have social</p>

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<p style="text-align: right;">Page 326</p> <p>1 media addiction, are there -- is there a specific 2 uniform set of guardrails that you establish for how 3 and when they can use social media again? 4 A. If after the 30 days of abstinence they 5 decide that they want to go back to using social 6 media, or if it's a child or a youth, the -- they 7 together with their parents or whatever, you know, 8 the circumstance is, then we try to set up 9 guardrails to help them stay within those limits. 10 Typically the more specific the plan for using, the 11 better. 12 But it's -- it's difficult because the 13 social media platforms are so reinforcing that once 14 people go back to using them, they can quickly slide 15 back into overuse and addictive use. So it's very 16 challenging. 17 Q. What guardrails do you recommend? 18 A. Specifying the specific platform that 19 they'll use; time constraints; what days of the week 20 that they'll use; how it will be monitored; how 21 they'll remain accountable; efforts to limit the 22 addictive design features, which isn't easy to do, 23 but includes things like turning off notifications 24 when possible, having the default be something like 25 what I just described to you where if you open up</p>	<p style="text-align: right;">Page 328</p> <p>1 important that looked specifically at YouTube and 2 how -- YouTube videos that are specifically designed 3 for that individual based on past viewing versus 4 general YouTube videos. This study compared those 5 two in a brain imaging design. This was Su, 6 et al -- S-U, et al. And showed that when viewing 7 YouTube, that the -- the brain's reward pathway 8 lights up or -- or activates more strongly when 9 they're specifically designed for that individual 10 versus for general consumption. 11 Q. And that's Su, et al.? 12 A. Yeah. 13 Q. Okay. Any other peer-reviewed studies that 14 have looked at, in particular, YouTube features 15 independent of content or controlling for content to 16 evaluate whether YouTube features, in particular, 17 have an impact on mental -- adolescent mental 18 health? 19 A. Well, YouTube itself has done a lot of 20 internal studies, as I mentioned, both quantitative 21 and qualitative, showing how their specific design 22 features are reinforcing and make it difficult for 23 people to stop using them. 24 Their internal documents also show how they 25 specifically augment and leverage those design</p>
<p style="text-align: right;">Page 327</p> <p>1 YouTube, you don't automatically get suggested "for 2 you" videos but instead get a blank screen where you 3 then have to enter what you're looking for. If 4 there's any default modes, you know, to try to limit 5 access, quantity, potency, novelty, uncertainty. 6 I'm not saying that those are effective 7 because, frankly, I haven't seen them be 8 particularly effective. For most people, the design 9 features are so reinforcing that once folks go back 10 to using, it's -- it's very hard to stay within 11 those boundaries. But, you know, we keep trying. 12 Q. Just a couple more questions. 13 With respect to YouTube, Dr. Lembke, are 14 you aware of any peer-reviewed study that has 15 focused specifically on the impact of YouTube 16 features independent of or controlling for content 17 on adolescent mental health? 18 MS. McNABB: Objection. Form. 19 BY MR. ERCOLE: 20 Q. Did you understand my question? I'm happy 21 to repeat it if you -- 22 A. Yes. 23 Q. Okay. 24 A. I believe I did understand your question. 25 And there is a study that I think is</p>	<p style="text-align: right;">Page 329</p> <p>1 features to increase watch time and the number of 2 users. To me, that's -- that's compelling evidence. 3 Q. How about peer -- I'm asking peer-reviewed 4 studies. Yeah. 5 A. I'm not aware of any other peer-reviewed 6 studies along those lines, although I will say that 7 many of the design features on YouTube are similar 8 to the design features on other platforms. 9 So I think those studies that don't 10 specifically involve YouTube also speak to YouTube's 11 addictive nature because of the similarities in the 12 design features. 13 Q. Dr. Lembke, do you have any substantive 14 opinions about the defense experts that you've 15 reviewed that are not reflected in your affirmative 16 report or contained in what we've already talked 17 about today? 18 A. Again, I think in order to answer that to 19 the best of my abilities, I would really have to see 20 the report again and have it right in front of me 21 right now. If you want to do that, we can do that. 22 Q. Just, did you -- coming in here today, did 23 you -- why didn't you review the reports and come in 24 with sort of a list of rebuttal opinions that you 25 could articulate on the record?</p>

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<p style="text-align: right;">Page 330</p> <p>1 MS. McNABB: Objection. Scope.</p> <p>2 THE WITNESS: I was not asked to produce a</p> <p>3 formal rebuttal report, so what I offered to you</p> <p>4 today from memory is sort of what I can do today.</p> <p>5 BY MR. ERCOLE:</p> <p>6 Q. Fair enough.</p> <p>7 But sort of -- this is the opportunity that</p> <p>8 kind of we get to ask you some questions about --</p> <p>9 about this. And I know there's been a fight over</p> <p>10 the amount of time that we get for your -- for your</p> <p>11 deposition.</p> <p>12 And so if you were going to come in today</p> <p>13 and offer rebuttal opinions to the defense experts,</p> <p>14 is there a reason you didn't come in with a series</p> <p>15 of notes that you could just articulate what those</p> <p>16 rebuttal opinions are?</p> <p>17 MS. McNABB: Objection to scope.</p> <p>18 THE WITNESS: I was specifically asked to</p> <p>19 not bring anything to this deposition but my report.</p> <p>20 MR. ERCOLE: Okay. I may have some</p> <p>21 additional questions after the defendants go. And</p> <p>22 then if your counsel has some follow-up questions, I</p> <p>23 may have some -- some other questions as well, but I</p> <p>24 think that's it for me at the moment.</p> <p>25 I do want to thank you for your -- for your</p>	<p style="text-align: right;">Page 332</p> <p>1 A. Yes.</p> <p>2 Q. Okay. You only cite 16 Meta documents in</p> <p>3 your report, though; correct?</p> <p>4 A. If you say so. Again, I didn't count them.</p> <p>5 Q. Okay. One Meta document that you cite</p> <p>6 repeatedly in your report is a research paper titled</p> <p>7 "Understanding Perceptions of Problematic Facebook</p> <p>8 Use"; correct?</p> <p>9 A. Yes.</p> <p>10 Q. And you cited to this paper earlier today?</p> <p>11 A. Yes.</p> <p>12 MS. BARNHART: All right. I'm going to ask</p> <p>13 the court reporter to mark as Exhibit 10 that paper.</p> <p>14 (Marked for identification purposes,</p> <p>15 Lembke Exhibit 10.)</p> <p>16 BY MS. BARNHART:</p> <p>17 Q. So, Dr. Lembke, is Exhibit 10 a copy of the</p> <p>18 paper titled "Understanding Perceptions of</p> <p>19 Problematic Facebook Use" that you cite in your</p> <p>20 report?</p> <p>21 A. Yes, it is.</p> <p>22 Q. This is a paper authored by</p> <p>23 Dr. Moira Burke, Dr. Justin Cheng, and</p> <p>24 Dr. Elena Davis; correct?</p> <p>25 A. Yes.</p>
<p style="text-align: right;">Page 331</p> <p>1 time. And to the extent I was talking over you at</p> <p>2 times, I apologize for that.</p> <p>3 THE WITNESS: That's okay.</p> <p>4 THE VIDEOGRAPHER: Do you want to go off?</p> <p>5 MS. BARNHART: Yeah, let's go off the</p> <p>6 record.</p> <p>7 THE VIDEOGRAPHER: The time is 5:15. We're</p> <p>8 off the record.</p> <p>9 (Recess taken from 5:15 to 5:16.)</p> <p>10 THE VIDEOGRAPHER: The time is 5:16. We're</p> <p>11 back on the record.</p> <p>12 EXAMINATION BY MS. BARNHART</p> <p>13 BY MS. BARNHART:</p> <p>14 Q. Good afternoon, Dr. Lembke. I don't know</p> <p>15 if we've formally met yet. I'm Lindsey Barnhart. I</p> <p>16 represent Meta.</p> <p>17 And thanks, again, for your time today.</p> <p>18 In preparing your report in the JCCP, you</p> <p>19 reviewed over 170 Meta documents; correct?</p> <p>20 A. I didn't count them, but I accept your</p> <p>21 number.</p> <p>22 Q. I can represent to you there's over 170 on</p> <p>23 your Materials Considered list.</p> <p>24 Is it fair to say you reviewed all of the</p> <p>25 materials on your Materials Considered list?</p>	<p style="text-align: right;">Page 333</p> <p>1 Q. Did you review the deposition testimony of</p> <p>2 these authors?</p> <p>3 A. I'd have to check my Materials Considered.</p> <p>4 Q. Sitting here today, do you recall reviewing</p> <p>5 the deposition testimony of these authors about this</p> <p>6 paper that they wrote?</p> <p>7 A. I believe that I did. But to be sure, I'd</p> <p>8 have to check my Materials Considered.</p> <p>9 Would you like me to do that?</p> <p>10 Q. I don't think that's necessary. If you --</p> <p>11 if you recall reviewing it, that's fine.</p> <p>12 My next question is, did you cite the</p> <p>13 deposition testimony of any of these employees in</p> <p>14 your report?</p> <p>15 A. I don't remember.</p> <p>16 Q. You didn't. I'll represent to you that</p> <p>17 there -- there are no citations to the deposition</p> <p>18 transcripts of any of these authors in your report.</p> <p>19 A. M-hm.</p> <p>20 Q. Is there a reason why you didn't cite their</p> <p>21 testimony about this paper in your report?</p> <p>22 A. I must have found it not essential.</p> <p>23 So there's a lot of things that I reviewed</p> <p>24 that I didn't cite in this report. Had I cited</p> <p>25 everything that was relevant, that I reviewed, it</p>

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<p style="text-align: right;">Page 334</p> <p>1 would be hundreds and hundreds of pages. 2 So when certain themes reached saturation, 3 I didn't continue to cite along the same lines. I 4 just used representative examples. 5 Q. You didn't think it was essential to cite 6 these authors' description of their findings in this 7 paper in your discussion about the findings of this 8 paper? 9 A. Well, I -- I reviewed what they said about 10 it, but I -- I didn't cite it in the report. I 11 didn't describe it in the report. 12 Q. Because you didn't find it essential; 13 right? 14 MS. McNABB: Objection. Misstates. 15 THE WITNESS: I didn't feel it was 16 necessary to put it in the report. 17 BY MS. BARNHART: 18 Q. Okay. And am I correct the Meta 19 researchers here set out to conduct this research 20 because they felt (as read): 21 "A better understanding of 22 problematic Facebook use can inform the 23 design context -- the design of 24 context-appropriate and supportive tools 25 to help people become more in control"?</p>	<p style="text-align: right;">Page 336</p> <p>1 anemic in terms of acting on their findings. 2 BY MS. BARNHART: 3 Q. Okay. Well, we'll talk more about that in 4 a little bit. 5 But fair to say your report does not 6 mention the stated purpose of this research paper at 7 all; correct? 8 A. I'll have to go back to where I mention the 9 report. Give me a moment. 10 Q. Yeah. I can direct you to page 28 of your 11 report. 12 What your report says is simply that -- 13 MS. McNABB: Hold on. She -- 14 BY MS. BARNHART: 15 Q. -- this paper found -- 16 MS. McNABB: She's not -- 17 (Simultaneous speakers - unclear.) 18 MS. BARNHART: I'm directing her to the 19 language. 20 BY MS. BARNHART: 21 Q. So page 28 -- 22 MS. McNABB: If you're going to read -- 23 BY MS. BARNHART: 24 Q. Are you on page 28? 25 MS. McNABB: -- she needs to turn --</p>
<p style="text-align: right;">Page 335</p> <p>1 A. That's what it says in the Abstract, yes. 2 Q. Do you agree that that's a good thing? 3 A. Yes. 4 Q. It's good, it's -- you agree it's a good 5 thing for Meta to conduct research on user's 6 experience and then make product design changes in 7 response to that -- 8 MS. McNABB: Objection. Asked -- 9 BY MS. BARNHART: 10 Q. -- research; correct? 11 MS. McNABB: Objection. Asked and 12 answered. 13 THE WITNESS: I believe it's important for 14 defendants, including Meta, to analyze the harms of 15 their products. I believe that they shouldn't be 16 the only ones doing that. They should make that 17 data available widely, publicly available to 18 researchers, because it's the best data there is. 19 And them not making it available is in and of itself 20 problematic. 21 I also am skeptical based on what I have 22 read and seen that they have -- they will use what 23 they find for good, that I -- Facebook has gathered 24 more than enough data to show the harms of Facebook 25 and Instagram, and yet their response has been</p>	<p style="text-align: right;">Page 337</p> <p>1 MS. BARNHART: Okay. 2 MS. McNABB: -- and give her a chance to 3 turn to the page. 4 MS. BARNHART: Right. 5 BY MS. BARNHART: 6 Q. So I'm at Section 8, Romanette -- as you 7 taught me -- Romanette viii, subsection B. And what 8 you've observed about this study is simply that 9 (as read): 10 "3.1 percent of Facebook users 11 developed severe social media addiction." 12 Do you see that? 13 MS. McNABB: Objection. Misstates the 14 report. 15 THE WITNESS: It does say here that 16 (as read): 17 "They found that 3.1 percent of 18 Facebook users developed severe social 19 media addiction." 20 Yes. 21 BY MS. BARNHART: 22 Q. Okay. Nowhere in Exhibit 10 do the authors 23 of this paper use the term "severe social media 24 addiction"; correct? 25 A. So the -- the authors here use a Likert</p>

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<p style="text-align: right;">Page 338</p> <p>1 scale on their survey items measuring problematic 2 use, a/k/a addiction, and based on the standard 3 interpretation of a Likert scale, "very often and 4 always" corresponds to severe. "Sometimes" would be 5 mild. And "never, rarely" would be -- "never, 6 rarely," would be mild, but sometimes would be 7 moderate. 8 So I would have to read it again to say -- 9 to see whether or not they used the language 10 "severe" or some equivalent. I'm happy to do that. 11 Q. Yeah. Well, as -- as we go through this 12 study together, you can let me know if you ever see 13 any discussion of severe social media addiction. 14 A. M-hm. 15 Q. And you just testified just now that 16 problematic use is also known as addiction. 17 Did I hear you correctly? 18 A. The Meta definition of "problematic social 19 media use," which I've talked about previously, is a 20 pretty good definition of social media addiction. 21 Q. Okay. Earlier you testified that 22 problematic use and social media addiction are 23 different things as a definitional matter; correct? 24 MS. McNABB: Objection. Misstates 25 testimony.</p>	<p style="text-align: right;">Page 340</p> <p>1 So if I testified to that earlier, I misspoke. 2 Compulsion does relate to low control over 3 experiences. 4 BY MS. BARNHART: 5 Q. Control is a separate component of your 6 definition of addiction; correct? 7 A. Control over time spent is one criteria. 8 But control over experiences is broader and could 9 include mental preoccupation with the drug. 10 So I think that compulsion could be 11 included. But I would agree with you that craving, 12 tolerance, and withdrawal are not specifically in 13 the Meta definition or the Facebook definition. 14 Q. Okay. So three of the six components of 15 your definition of "social media addiction" are not 16 actually reflected in the definition of "perceived 17 problematic use" that's used in this paper; correct? 18 A. As I said earlier, I am summarizing 11 DSM 19 criteria into an easier shorthand way to remember 20 them into 6 criteria. 21 But it's not as if, like, there are 22 six criteria now and you need two of them, because 23 the four Cs encompass nine criteria. 24 So you can have multiple consequences 25 criteria, which means that the "negative life</p>
<p style="text-align: right;">Page 339</p> <p>1 THE WITNESS: I believe I testified that -- 2 that they weren't identical, but there was enough 3 overlap for me to view them as equivalent, and 4 that's how I used the terms. I used "problematic 5 social media use" as equivalent to "social media 6 addiction," and I believe I testified that way. 7 BY MS. BARNHART: 8 Q. Actually, what you testified earlier is 9 that Meta's definition of perceived problematic use, 10 as used in this paper, does not consider criteria 11 such as craving, compulsion, tolerance, or 12 withdrawal; correct? 13 MS. McNABB: Objection. Misstates 14 testimony. 15 BY MS. BARNHART: 16 Q. Is that correct? 17 A. Give me one second. 18 Can you say it again? 19 Q. You testified earlier today that Meta's 20 definition of "perceived problematic use," which is 21 the definition used in Exhibit 10, does not consider 22 criteria such as craving, compulsion, tolerance, or 23 withdrawal. 24 MS. McNABB: Same objection. 25 THE WITNESS: It does include compulsion.</p>	<p style="text-align: right;">Page 341</p> <p>1 impacts" part of their definition, probably -- not 2 probably, does encompass multiple criteria 3 overlapping with the DSM criteria. 4 Q. My question, Dr. Lembke, was, isn't it true 5 that the definition of "perceived problematic use" 6 used in the paper that we've marked as Exhibit 10 7 does not include three of the six components - 8 craving, tolerance, or withdrawal -- that are part 9 of your definition of "social media addiction"? 10 A. That's fair. 11 BY MS. McNABB: Objection. 12 BY MS. BARNHART: 13 Q. Okay. 14 A. Yeah. 15 Q. And, in fact, the authors of this paper -- 16 excuse me -- explicitly state that they are not 17 measuring addiction; correct? 18 A. Can you point me to that? 19 Q. Sure. 20 So if you look at the second paragraph 21 under the first section, the Introduction section, 22 the authors write (as read): 23 "We do not use the term 'addiction' 24 because there is no agreed-upon criteria 25 for diagnosis and because diagnoses of</p>

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<p style="text-align: right;">Page 342</p> <p>1 clinical-level concerns would require 2 more formal assessment (i.e., by a mental 3 health professional)." 4 Do you see that? 5 A. Let me just read it. 6 So that's what it says here. I disagree 7 with that statement, but that is what it says here. 8 Q. This statement is the authors stating what 9 terms they plan to use in the paper; correct? 10 A. No. This statement is making broader 11 assumptions about diagnostic criteria for the 12 diagnosis of social media addiction, which, as I've 13 said in my testimony today and as I say in my 14 report, I don't agree with. 15 I do feel that there is -- there are 16 agreed-upon criteria, not every definition is 17 identical. But the overall gestalt describing 18 addictive behaviors is similar enough that I think 19 we're talking about the same construct. 20 They, furthermore, say (as read): 21 "Because diagnoses of clinical-level 22 concerns would require more formal 23 assessment (i.e., by a mental health 24 professional)." 25 I disagree with that statement. I think a</p>	<p style="text-align: right;">Page 344</p> <p>1 So, you know, we can argue about the 2 language and who's using what term, you know, when. 3 The bottom line is, it's the same disease process, 4 whatever you call it. 5 BY MS. BARNHART: 6 Q. I understand your position on that. 7 Can we agree, then, that this paper, 8 Exhibit 10, does not ever in it state that 9 3.1 percent of Facebook users developed severe 10 social media addiction? 11 MS. McNABB: Objection. Asked and 12 answered. 13 THE WITNESS: I think all I can agree on 14 with that is that they don't use the word 15 "addiction," but -- 16 BY MS. BARNHART: 17 Q. Or the word "severe"; correct? 18 A. Well, let me look a little -- 19 MS. McNABB: Objection. Asked and 20 answered. 21 THE WITNESS: -- more closely. 22 BY MS. BARNHART: 23 Q. And if you need to review this whole paper 24 to answer my question, I'd suggest we go off the 25 record.</p>
<p style="text-align: right;">Page 343</p> <p>1 formal assessment by a mental health professional is 2 only one way to get at clinical-level concerns. I 3 think there are other ways to do that. 4 The defendants' own documents get at those 5 clinical-level concerns. The medical literature 6 looking at populations using survey scales on social 7 media addiction get at those clinical concerns. 8 Q. Do you disagree with the statement that 9 these authors do not use the term "addiction" in 10 this paper? 11 A. I can agree with the statement that they do 12 not use the term "addiction." But that's the only 13 part of that statement that I agree with. 14 Q. And leaving that aside, you, nevertheless, 15 interpreted this paper, in which the term 16 "addiction" is never used, to demonstrate that 17 3.1 percent of Facebook users developed severe 18 social media addiction; correct? 19 MS. McNABB: Objection. 20 THE WITNESS: As I made clear in my 21 testimony today and also specifically state in my 22 report, addiction is a commonly understood term that 23 is synonymous with use disorder in the DSM and 24 other -- and other definitions of social media 25 addiction.</p>	<p style="text-align: right;">Page 345</p> <p>1 MS. McNABB: She has only taken a minute to 2 look at it this far. If she needs a few minutes, 3 she can review it on the record. If she needs 4 ten minutes or half an hour, then we can go off the 5 record. But she can give her a couple of minutes. 6 BY MS. BARNHART: 7 Q. Can you answer the question? 8 A. I am not seeing their use of the word 9 "severe" in here. But I don't think that undermines 10 the point that I'm making by referencing this 11 article, which is that they found that 3.1 percent 12 developed a social media addiction, even though they 13 didn't use that language. 14 Q. So are you, then, changing your language in 15 your report to drop the word "severe"? 16 MS. McNABB: Objection. 17 BY MS. BARNHART: 18 Q. Do you think that's a misstatement in your 19 report? 20 MS. McNABB: Objection. Argumentative. 21 BY MS. BARNHART: 22 Q. And I'm still on that same page, 28. 23 A. Right. I had gone to another page. 24 I'd like to see -- I think in order to 25 answer this question, I have to look at footnote 90,</p>

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<p style="text-align: right;">Page 346</p> <p>1 the Meta document footnote 90, to refresh my memory. 2 Because I'm recalling that I saw a document that was 3 an internal Facebook document that said that they 4 found that 3.1 percent developed severe problematic 5 use, or if they didn't use the word "severe," they 6 used some equivalent term, and that 55 percent 7 developed a, actually, moderate use disorder. 8 So -- and I believe that is footnote 90. 9 So it would be great if I could see that and I could 10 better answer your question. 11 Q. Well, unfortunately, your counsel has given 12 me very limited time with you today. So I don't 13 have time to show you documents other than the one 14 that you cited to support this statement. 15 MS. McNABB: Objection. Argumentative. 16 We've given counsel -- 17 MS. BARNHART: There's no question to 18 object to. 19 MS. McNABB: -- extra time. 20 MS. BARNHART: So ... 21 MS. McNABB: I'm objecting to your comment 22 that was argumentative. 23 MS. BARNHART: Well, let me finish my 24 question then. And then you can object to a 25 question if you have an objection.</p>	<p style="text-align: right;">Page 348</p> <p>1 restrictive than some models. Therefore, 2 our estimate of 3.1 percent is an upper 3 bound compared to other definitions with 4 stricter criteria." 5 Do you see that? 6 A. Okay. Yeah, I see that. 7 Q. You agree with me that "upper bound" means 8 a conservative estimate of perceived problematic 9 use? 10 MS. McNABB: Objection. Speculation. 11 THE WITNESS: I agree with you that that's 12 what they're claiming here. 13 BY MS. BARNHART: 14 Q. Okay. Earlier today you testified that 15 this paper measured mental health -- mental health 16 outcomes, including depression and anxiety. 17 Do you recall that testimony? 18 A. I'm not specifically recalling that. 19 Q. Do you agree with me that this paper does 20 not, in fact, measure mental health outcomes, 21 including depression and anxiety? 22 A. Well, this -- this paper looks at 23 consequences defined as "negative life impact 24 attributed to Facebook." 25 But you are correct, it doesn't</p>
<p style="text-align: right;">Page 347</p> <p>1 BY MS. BARNHART: 2 Q. So I want to look into -- to the definition 3 that these authors used for problematic use. If you 4 look at the page ending in -78, at the bottom of 5 this under "Results." 6 A. Sorry, I'm not -- oh, yeah. 7 Yeah. 8 Q. These authors state that they've actually 9 used a broader definition of problematic use than is 10 articulated in the literature, and they find that 11 their estimate of 3.1 percent is an upper bound 12 compared with other definitions with stricter 13 criteria. 14 Do you see that? 15 A. I'm sorry. I don't know where that is. 16 Can you point to it? 17 Q. It's in the paragraph under "Who 18 experiences problematic use?" 19 A. M-hm. 20 Q. And then if you read down into that 21 paragraph, it says (as read): 22 "Because of a lack of consensus in 23 prior literature about how to define 24 problematic use, we include the two most 25 common criteria. This is less</p>	<p style="text-align: right;">Page 349</p> <p>1 specifically ask about depression or anxiety. 2 Q. Okay. So you do not believe that this 3 paper is one that made any findings relating to any 4 relationship between Facebook use and the 5 development of depression or anxiety? 6 MS. McNABB: Objection. Misstates 7 testimony. 8 THE WITNESS: That's fair. 9 BY MS. BARNHART: 10 Q. In your report, I'm looking at pages -- the 11 bottom of page 25 going to the top of page 26. This 12 is another place where you cite Exhibit 10. And you 13 say that this study used the Bergen Social Media 14 Addiction Scale. 15 Do you see that? 16 A. Yes, I do. 17 Q. And in your words, that scale measures 18 addiction through six core components: salience, 19 tolerance, mood modification, relapse, withdrawal, 20 and conflict; correct? 21 A. Yes. 22 Q. And the definition of "perceived 23 problematic use" that was used in Exhibit 10 does 24 not attempt to measure those six components, does 25 it?</p>

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<p style="text-align: right;">Page 350</p> <p>1 MS. McNABB: Objection. Vague. 2 THE WITNESS: It attempts to measure some 3 of those components but not all of those components. 4 BY MS. BARNHART: 5 Q. Correct. 6 And so it is not a true statement that the 7 Meta researchers who wrote this paper that is 8 Exhibit 10 used the Bergen Social Media Addiction 9 Scale; correct? 10 MS. McNABB: Objection. Misstates. 11 THE WITNESS: Well, if you go to the paper 12 itself and look at their Method section, 13 specifically under "Problematic use survey," it 14 states here (as read): 15 "The survey contained questions about 16 control and negative life impact adapted 17 from the Internet Addiction Test, the 18 Generalized Problematic Internet Use 19 Scale, and the Bergen Facebook Addiction 20 Scale." 21 So I believe that that's an accurate 22 statement to say that they used at least some of the 23 questions from the Bergen Facebook Addiction Scale. 24 BY MS. BARNHART: 25 Q. And that's -- that's not what you said in</p>	<p style="text-align: right;">Page 352</p> <p>1 the definition of "perceived problematic use" in 2 this paper? 3 A. I mean, I disagree with that because their 4 questions about consequences are vague, including 5 whether or not Facebook has a, quote, very negative 6 impact on their lives. And that very negative 7 impact can take many different forms including, 8 frankly, depression and anxiety. 9 So I want to kind of reverse what I said 10 earlier. I think you persuaded me to say something 11 that I don't think is true, looking at this more 12 closely, which I stated earlier that this study is 13 evidence that problematic social media use, social 14 media addiction, can contribute to a myriad of 15 negative consequences, including depression and 16 anxiety. 17 And looking, again, here, I think it's 18 perfectly possible, if not probable, that the very 19 negative impacts on their lives could have included 20 mood impacts. 21 Q. There's no specific finding in here about 22 depression or anxiety, correct, and no specific 23 question to the respondents about that topic? 24 MS. McNABB: Objection. Vague and 25 compound.</p>
<p style="text-align: right;">Page 351</p> <p>1 your report; right? 2 So are you modifying your report now to say 3 that these Meta researchers adapted some questions 4 from a scale as opposed to using the Bergen media -- 5 social media addiction scale? 6 MS. McNABB: Objection. Misstates report 7 and argumentative. 8 THE WITNESS: So it looks like they adapted 9 these scales to create this scale. It's -- it's a 10 little hard to know exactly what they did. 11 But I would agree with you that they 12 didn't -- it doesn't appear that they used the 13 Bergen Facebook Addiction Scale in its entirety, 14 that they used some of the questions related to 15 out-of-control use and especially consequences. 16 BY MS. BARNHART: 17 Q. So they did not, in fact, employ the Bergen 18 social media addiction scale in conducting this 19 research; correct? 20 A. I disagree with that statement. It's clear 21 that they used the Bergen Facebook Addiction Scale 22 to inform their study, which still lends credibility 23 to the scale itself. 24 Q. They did not attempt to measure tolerance 25 or mood modification; correct? That was not part of</p>	<p style="text-align: right;">Page 353</p> <p>1 THE WITNESS: I'm not seeing specific 2 questions asking about anxiety and depression. But 3 the question, Has Facebook had a very negative 4 impact on your life? Even the other questions, Has 5 it hurt school or work performance? You know, Does 6 it get involved with sleep? I mean, I think there 7 could -- embedded in that could be mood 8 consequences. 9 BY MS. BARNHART: 10 Q. And you're speculating about that; right? 11 A. I wouldn't say I'm -- 12 MS. McNABB: Objection. 13 THE WITNESS: I don't think I'm 14 speculating, especially about the statement 15 "Facebook has a very negative impact on their 16 lives," because if you look at Facebook's own 17 qualitative studies -- 18 BY MS. BARNHART: 19 Q. I'm just asking you about Exhibit 10? 20 A. Sure. 21 Q. -- Dr. Lembke. I'm not asking about any 22 other studies. 23 A. Yeah. But -- 24 MS. McNABB: Just for the record to be 25 clean, please don't interrupt her answer. She's</p>

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<p style="text-align: right;">Page 354</p> <p>1 giving you an answer. You can ask your question 2 when she's done. 3 THE WITNESS: Yeah. 4 So this -- you know, this work by Facebook 5 is clearly building on a larger body of work within 6 Facebook that I evaluated, including qualitative 7 studies that they did, one of which specifically 8 identified problematic outcomes. 9 BY MS. BARNHART: 10 Q. Okay. Well, if you need to find it, we can 11 go off the record and find that. 12 A. That's fine. 13 Q. But, again, I have very limited time with 14 you today. 15 A. I think I -- I've said mainly what I need 16 to say, which is that I do feel that this represents 17 a piece of evidence that has broad-based negative 18 consequences that could include mood consequences, 19 for example, depression and anxiety. 20 Q. If you look at the page ending in -81. 21 A. -81. 22 Q. The second paragraph on that page. 23 A. Oh, in the study? 24 Q. Yes. M-hm. 25 The authors have a finding on this page.</p>	<p style="text-align: right;">Page 356</p> <p>1 how I would understand this finding, that those 2 individuals that find Facebook reinforcing and 3 valuable are also the very same people who are more 4 likely to get addicted to Facebook. 5 I would also say that as people become 6 addicted to social media, they have what's called 7 "delayed discounting" where they tend to value 8 short-term rewards over longer-term rewards. 9 So the disease progression itself would 10 entail finding Facebook stimuli, you know, more 11 reinforcing than other reinforcers. So there's a 12 loss of salience in other activities and narrowing 13 of focus on the drug of choice. 14 BY MS. BARNHART: 15 Q. Dr. Lembke, do you have any understanding 16 of Meta's Teen Accounts feature? 17 A. I am somewhat familiar with that, yes. 18 I've read about that. 19 Q. And you understand that the Teen Accounts 20 feature makes a number of time management tools 21 defaults for teen users? 22 MS. McNABB: Objection. Foundation. 23 THE WITNESS: Yes, I am aware of that. 24 BY MS. BARNHART: 25 Q. And do you understand that 13- to</p>
<p style="text-align: right;">Page 355</p> <p>1 Are you there? 2 A. I'm there. 3 Q. I'm looking at the paragraph starting 4 "Despite feeling." 5 (As read): 6 "Despite feeling like there were 7 areas of their lives that were negatively 8 impacted by Facebook use, people in the 9 problematic use group also rated Facebook 10 as more valuable in their lives than did 11 people in the nonproblematic use group." 12 Do you see that? 13 A. I do see that. 14 Q. So even those users who reported perceived 15 problematic use received value and benefit from 16 using Facebook? 17 MS. McNABB: Objection. Misstates. And 18 also misstates the full sentence in the -- in the 19 study. 20 THE WITNESS: It's not at all surprising to 21 me that people in the problematic use group rated 22 Facebook as more valuable in their lives. We know 23 very well that people who are vulnerable to a 24 certain addictive behavior find that addictive 25 behavior more salient or reinforcing. And that's</p>	<p style="text-align: right;">Page 357</p> <p>1 15-year-old users of Instagram cannot opt out of 2 those defaults without parental approval? 3 MS. McNABB: Objection. Foundation. 4 THE WITNESS: If -- I'd be curious when 5 that was implemented. My sense of all of these, 6 quote-unquote, well-being interventions is that 7 they're quite recent and that it is possible to opt 8 out of them. 9 BY MS. BARNHART: 10 Q. So it's not -- you're not aware that 13- to 11 15-year-old Instagram users cannot opt out of the 12 Teen Account defaults without parental approval? 13 MS. McNABB: Objection. Foundation. 14 BY MR. ERCOLE: 15 Q. Is that information your counsel did not 16 provide to you in connection with your report? 17 MS. McNABB: Objection. Foundation. 18 Argumentative. And also calls for attorney-expert 19 privilege. 20 So you can answer it "yes" or "no," but -- 21 if you -- if you know. But don't go into details 22 about what we've discussed. 23 THE WITNESS: Yeah, I'm not specifically 24 recalling that. 25 MS. BARNHART: Let's go off the record.</p>

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<p style="text-align: right;">Page 358</p> <p>1 THE VIDEOGRAPHER: The time is 5:46. We're 2 off the record. 3 (Recess taken from 5:46 to 5:53.) 4 THE VIDEOGRAPHER: The time is 5:53. We're 5 back on the record. 6 EXAMINATION BY MR. BLAVIN 7 BY MR. BLAVIN: 8 Q. Good evening, Dr. Lembke. My name is 9 Jonathan Blavin. I'm an attorney at Munger, 10 Tolles & Olson. We represent Snap in the case. 11 And I'm just going to ask you a few 12 questions relating to Snapchat, and if anything is 13 unclear, please let me know. 14 Sitting here today, are you offering any 15 opinions regarding Snapchat that are not disclosed 16 in your report? 17 A. No. 18 Q. Okay. So if your report is silent, doesn't 19 address a particular feature of Snapchat, it's fair 20 to say that you do not intend to offer at trial any 21 opinions relating to that feature? 22 MS. McNABB: Objection. Speculation. 23 THE WITNESS: That might be an overreach. 24 If I'm presented with a feature and asked to 25 evaluate it in realtime, I may well offer an</p>	<p style="text-align: right;">Page 360</p> <p>1 A. No, I do not. 2 Q. And I believe you testified before that 3 other than YouTube, you don't presently use any of 4 the defendants' platforms; is that right? 5 A. That is correct. 6 Q. Okay. Have you ever used Snapchat? 7 A. I have seen it used by others, my patients 8 and my kids. And they've described to me their 9 usage. But I personally have not used it to 10 communicate with others. 11 Q. Okay. So other than observing maybe your 12 children or hearing feedback who are using Snapchat 13 or others or hearing feedback from your patients, 14 would it be fair to say that that's the extent of 15 where you've received your knowledge about how 16 Snapchat functions? 17 A. I would add to that list my review of 18 Snapchat's internal documents. 19 Q. Okay. 20 A. Yeah. 21 Q. Dr. Lembke, when a user opens Snapchat, 22 what part of the app do they initially see? 23 A. I believe there's a home page. I don't 24 know if it's called that, but it's something like a 25 home page that they will see.</p>
<p style="text-align: right;">Page 359</p> <p>1 opinion. 2 BY MR. BLAVIN: 3 Q. But other than that circumstance, in which 4 it could be presented to you in the context of your 5 testimony, you don't anticipate offering any 6 testimony relating to features which are not 7 specifically addressed in your report? 8 A. That's correct. 9 Q. Okay. Now, I believe earlier you testified 10 that you reviewed four of the defendants' experts' 11 reports: reports from Drs. Tucker, Kishida, 12 Auerbach, and Galván; is that correct? 13 A. Yes. 14 Q. It's fair to say, then, that you did not 15 review the report from Dr. Nick Allen? 16 A. I did not. 17 Q. Okay. And it's fair to say that, sitting 18 here today, you don't have any rebuttal opinions 19 relating to Dr. Allen's report? 20 A. That's correct. 21 Q. I believe you testified before, Dr. Lembke, 22 that you do not have any accounts for the 23 defendants' platforms; is that right? 24 A. That's correct. 25 Q. So you don't have a Snapchat account?</p>	<p style="text-align: right;">Page 361</p> <p>1 Q. That's your opinion, that they see a home 2 page when they open the app? 3 A. It like their profile page or the page that 4 has their friends on it. 5 Q. Okay. Dr. Lembke, would it surprise you 6 that when a user opens the Snapchat app, they don't 7 see a home page but they see a camera? 8 A. Oh. I guess that would surprise me a 9 little bit, yes. 10 Q. Okay. So it's fair to say that it's news 11 to you that when a user opens the Snapchat app, it 12 actually opens to a camera? 13 A. That's news to me, yeah. 14 I know that -- I am aware that Snapchat 15 identifies itself as a -- a photography company. I 16 don't think they use that exact language, but that 17 they see themselves as a photo-exchanging platform 18 and that that's an important distinction to them. I 19 don't see it as an important distinction. 20 But thank you for clarifying for me that 21 when they first open it, they see a camera. 22 Q. Okay. And given that that's the way that 23 the app opens, it opens to a camera, why wouldn't 24 that be an important distinction in your opinion? 25 A. Because whatever comes after the camera</p>

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<p style="text-align: right;">Page 362</p> <p>1 looks very similar to other defendants' platforms 2 with similar addictive design features, like the 3 endless scroll, the autoplay, the notifications, the 4 posts, comments, shares, likes, and then the 5 addition of other Snapchat-specific features, like 6 the Streaks, the BFFs, the trophies, things like 7 that. The filters, the Bit emojis. 8 Q. Okay. Do you know what comes after a user 9 uses a camera -- the camera function on the app? 10 A. I've explored many of the different pages. 11 I can't say I know the specific sequence in which 12 they appear. 13 Q. Do you know that when a user uses the 14 Snapchat app and takes a picture, the app then 15 prompts them to see if they want to send that image 16 to one of their friends? 17 A. Yes, I'm aware of that. 18 Q. Okay. Can you explain to me your 19 understanding of how Streaks works on the Snapchat 20 app? 21 A. My understanding is that Streaks functions 22 like a reward in and of itself for the number of 23 times you message someone else. And I believe that 24 Streaks specifically relies on daily messaging, so 25 there's a 24-hour cycle that you have to message</p>	<p style="text-align: right;">Page 364</p> <p>1 THE WITNESS: I think Streaks are one of 2 the design features that create this compulsive way 3 of interacting on a platform. And given enough of 4 those features, especially in a vulnerable youth 5 population, can contribute to the addictive 6 potential. 7 I don't think I would stand here and say 8 that a streak by itself would make an app addictive. 9 But it's all of those different design features in 10 concert. 11 BY MR. BLAVIN: 12 Q. Okay. So a streak in -- just so I 13 understand your testimony -- 14 A. Yeah. 15 Q. -- a streak in isolation on an app, in your 16 opinion, wouldn't necessarily make the app 17 addictive, but it's the streak in combination with 18 other features or functionalities on the app; is 19 that right? 20 A. Yeah. I think the emphasis is on not 21 necessarily. So it might, you know, in a vulnerable 22 user. But it's really the combination of these 23 various addictive design features that ultimately 24 makes them highly reinforcing. 25 Streaks is one of many features on Snapchat</p>
<p style="text-align: right;">Page 363</p> <p>1 them at least once a day to maintain your streak. 2 Q. Yeah. 3 And do you understand that a user must 4 choose to initiate and pursue a streak with another 5 user on the app? 6 A. Yes. 7 Q. And is it fair to say that if a user wanted 8 to maintain a streak on the Snapchat app, like you 9 said, it could just -- they need to do it once a 10 day -- that it would only take a few minutes for 11 them to continue that streak each day? 12 A. Yes, I am aware of that. 13 Q. Are you aware that other apps besides 14 Snapchat use a similar Streaks functionality? 15 A. I didn't know that, but I'm not surprised. 16 Q. Would it surprise you that the Duolingo 17 app, which teaches people how to use foreign 18 languages, has a Streak functionality to it? 19 MS. McNABB: Objection. Foundation. 20 THE WITNESS: It doesn't surprise me, no. 21 BY MR. BLAVIN: 22 Q. Do you think Streaks used in other apps, 23 such as Duolingo, are inherently harmful? 24 MS. McNABB: Objection. Foundation and 25 scope.</p>	<p style="text-align: right;">Page 365</p> <p>1 that makes it reinforcing. 2 Q. What other features in conjunction with 3 Streaks would reinforce the addictive nature of the 4 app, in your opinion? 5 A. So I do talk about this in detail in my 6 report, and I'm happy to go to that section. 7 Q. Well, I guess -- you don't need to do that. 8 A. Okay. 9 Q. My question really is, is there any feature 10 that you identify that is specifically tied to 11 communicating via Streak which adds to the addictive 12 nature of the Streak in your opinion, or are these 13 just other features of Snapchat unrelated to the 14 Streak which in your opinion makes the app generally 15 more addictive? 16 MS. McNABB: Objection. Compound. And 17 vague. 18 BY MR. BLAVIN: 19 Q. And if you don't know, it's fine to say 20 that you don't know. 21 A. I'm just trying to see -- 22 Q. Yeah. 23 A. -- see if there are features on Snapchat 24 that are in combination with Streaks or whether 25 these are separate features. Your question ...</p>

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<p style="text-align: right;">Page 366</p> <p>1 Q. Well, I'll let you think about that 2 further. If something comes to mind, you can answer 3 the question. 4 A. Thank you. 5 Q. Are you familiar with what sort of 6 information is displayed on a Snapchat user's 7 profile? 8 A. Yes. 9 Q. What information is displayed? 10 A. Photographs, videos, Streaks, friends, 11 people who might be friends, tailored videos, 12 endless scroll videos that are not tailored but that 13 other people have liked, maps, geolocation. 14 Did I say -- 15 Q. On a user's profile? 16 So -- 17 A. Oh, on a user's profile. 18 Q. -- is it -- do you -- is it your testimony 19 that a user's friends list are displayed on their 20 public profile on Snapchat? 21 A. I'm actually not sure what's on the public 22 profile. 23 Q. Okay. Do you know if Snap has likes, 24 Snapchat has likes? 25 A. I don't believe so.</p>	<p style="text-align: right;">Page 368</p> <p>1 Do you know generally how much time 2 Snapchat users on average spend using different 3 features on the app? 4 A. Let me just look at my report quickly. 5 Q. It's fair to say I didn't see that in your 6 report? 7 A. I do not. 8 Q. Okay. So you don't know, for example, if 9 users spend -- adult users or minor users, if they 10 spend most of their time on the app messaging with 11 friends versus, for example, viewing content on 12 Spotlight? 13 A. Yeah. I don't know the answer to that. 14 Q. Did you ask anyone for that data? 15 A. I did not. 16 Q. Did you think it wasn't important to your 17 opinions? 18 A. I think -- 19 MS. McNABB: Hold on. Sorry. 20 Objection. Foundation. 21 THE WITNESS: I think it's a great idea. I 22 didn't think about it. But if I had, I would have 23 asked for it. 24 BY MR. BLAVIN: 25 Q. Okay. Are you aware that Snapchat is</p>
<p style="text-align: right;">Page 367</p> <p>1 Q. Okay. So the testimony that you've given 2 today about likes being an addictive feature of apps 3 would not apply to Snapchat; is that fair? 4 A. I don't think it's quite fair just because 5 Snapchat has other features that are akin to likes, 6 and in a way Streaks serve that role. Somebody that 7 you're Streaking with, that you bother to do that 8 every day, that's positive re-enforcement. So it 9 works in a similar type of way. 10 Certainly the BFF functions are strongly 11 socially reinforcing, and so akin to the likes. 12 Q. M-hm. 13 A. Friend emojis. 14 Q. When a user posts a public story on 15 Snapchat, do you know if the number of times the 16 story has been viewed is publicly available? 17 A. I don't know. 18 Q. Okay. 19 A. I do believe, though, that Spotlight 20 specifically highlights popular content. And 21 Snapchat internal documents make it clear that the 22 algorithm has been designed to, quote-unquote, 23 surface popular videos. 24 Q. Let's talk a little bit about the uses of 25 Snapchat.</p>	<p style="text-align: right;">Page 369</p> <p>1 primarily used by its users as a communications 2 tool? 3 MS. McNABB: Objection. Foundation. 4 THE WITNESS: Then I kind of wonder what 5 you mean by that. 6 BY MR. BLAVIN: 7 Q. Well, for example, we talked about 8 examining usage of various features on the app. As 9 I've talked about before, the app opens to a camera 10 which then allows someone to share video image with 11 a friend. 12 My question to you is, are you aware that 13 Snapchat users primarily use Snapchat as a method of 14 communication with one another as opposed to using 15 other features on the app? 16 A. I wasn't aware that that was how people 17 were primarily using it. 18 Q. Okay. You testified before that you've 19 studied these apps. You consider yourself an expert 20 in the features of the app. 21 So with respect to Snapchat's messaging 22 functionality, would you agree that it's similar to 23 texting messages to a friend using the iMessage 24 feature on an iPhone? 25 MS. McNABB: Objection. Foundation.</p>

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<p style="text-align: right;">Page 370</p> <p>1 THE WITNESS: I would agree that it has 2 texting capabilities, but there are many other 3 additional features that make it really different 4 from just texting on an iPhone. 5 BY MR. BLAVIN: 6 Q. Right. 7 But you haven't yourself studied, in terms 8 of time spent on the app, whether users primarily 9 use the app for these texting functionalities versus 10 these other features; correct? 11 A. That's correct. 12 Q. And would that be a relevant -- I think you 13 said before that it would be a great idea to look at 14 that data? 15 A. M-hm. 16 Q. So you think that would be relevant to your 17 opinions relating to Snapchat? 18 MS. McNABB: Objection. Misstates 19 testimony. 20 THE WITNESS: It would be relevant, but the 21 finding that they're spending most of their time 22 texting wouldn't change my opinion about the 23 addictive nature of Snapchat. 24 BY MR. BLAVIN: 25 Q. Okay. But I believe you testified earlier</p>	<p style="text-align: right;">Page 372</p> <p>1 said, that texting on Snapchat is used to maintain 2 some type of social status, I did not see that in 3 your report. 4 A. M-hm. 5 Well, on page 52 of my report, I mention a 6 qualitative study that was done by Snapchat, which 7 specifically calls out Streaks, for example, as 8 addictive, and then quotes from users saying that 9 Streaks are stressful, that they feel obligated to 10 maintain Streaks because of friends' reactions if 11 they don't. 12 Q. I'm sorry, Dr. Lembke. I wasn't asking 13 about Streaks specifically. I understand that some 14 users can opt in to use Streaks. 15 I was just talking about the basic 16 functionality of messaging on Snapchat back and 17 forth with your friends. 18 A. M-hm. 19 Q. And are -- I did not see an opinion, other 20 than this paragraph on Streaks which you've 21 referenced, which talks about social status or 22 anything like that relating to Snapchat's use as a 23 communications tool. 24 A. I'm sorry. Can you repeat your question? 25 Q. I'm just asking, can you -- I -- my</p>
<p style="text-align: right;">Page 371</p> <p>1 in this deposition -- you were asked various 2 questions about activities which could be addictive. 3 You were asked, is texting an addictive behavior? 4 And I believe you testified, no, that texting is not 5 addictive. 6 MS. McNABB: Objection. Misstates and 7 vague. 8 THE WITNESS: I should have qualified that 9 answer with it depends on the platform on which the 10 texting is occurring. 11 BY MR. BLAVIN: 12 Q. So is texting on iMessage addictive? 13 MS. McNABB: Objection. Scope. 14 THE WITNESS: I mean, it could be 15 potentially. 16 But if I look at Snapchat, you know, you 17 say that they're using it as a communication tool. 18 But my analysis is that a lot of the exchanges that 19 are occurring on Snapchat, even if they're occurring 20 via texting, is in order to maintain some kind of 21 social status or be in an in group or maintain 22 Streaks or BFFs. 23 BY MR. BLAVIN: 24 Q. Where is that in your report? 25 In terms of the specific thing you just</p>	<p style="text-align: right;">Page 373</p> <p>1 question was focused not on Streaks, just using 2 Snapchat as a communications tool, back-and-forth 3 messaging with your friends. I didn't see any 4 opinion in your report which tied it to social 5 status. 6 A. So my assessment of Snapchat is that it's 7 not simply an innocuous communication tool between 8 friends; that a lot of the kids who use Snapchat, 9 especially those who get addicted to it, spend a lot 10 of time there trying to maintain this kind of social 11 validation and social status which the Snapchat 12 features have created. 13 Q. Okay. Do you cite any studies or other 14 types of evidence to support that conclusion? 15 I'm not sure where that conclusion is 16 actually in your report itself. 17 MS. McNABB: Objection. Compound. 18 BY MR. BLAVIN: 19 Q. Okay. Have you been able to find the part 20 of your report which establishes that? 21 A. I mean, my report focuses more on the 22 features, like the endless scroll -- 23 Q. Okay. 24 A. -- the video platforms. 25 Q. And that's, like, the Spotlight feature?</p>

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<p style="text-align: right;">Page 374</p> <p>1 A. Yeah. The posts, the favorite shares, the 2 comments, the maps, the BFFs. 3 Q. So not specifically the messaging 4 functionality of Snapchat? 5 A. And to me, those are a part of the 6 messaging functionality. But if you're specifically 7 talking about the texting feature, yeah, it's not 8 focusing on the texting feature. 9 MR. BLAVIN: I'd like to introduce an 10 exhibit. I believe this is Tab 1 in our set of 11 documents. I apologize. It's not stapled. It's a 12 big document. 13 (Discussion off the stenographic record.) 14 (Marked for identification purposes, 15 Lembke Exhibit 11.) 16 BY MR. BLAVIN: 17 Q. Dr. Lembke, if you look at page 10 of your 18 report, in subpoint D, it says (as read): 19 "A February 2025 study 'Young 20 Consumers and Social Media.' 21 Do you see that? 22 A. Yes. 23 Q. And that's -- if you go to page 8, that's 24 under the heading of your report (as read): 25 "Social media addiction has been</p>	<p style="text-align: right;">Page 376</p> <p>1 "A model of time spent on social 2 media ... " 3 Do you see that? 4 A. Third paragraph from -- yes, I do. 5 Q. Okay. And it says (as read): 6 "A model of time spent on social 7 media reveals that consumers spend 8 significantly more time on content media 9 than on chat media (e.g., Snapchat and 10 Messenger)." 11 Do you see that? 12 A. M-hm. 13 Q. Do you have any reason to disagree with 14 that opinion? 15 MS. McNABB: Objection. 16 THE WITNESS: I mean -- 17 MS. McNABB: Speculation. Foundation. 18 THE WITNESS: -- no. 19 BY MR. BLAVIN: 20 Q. Okay. This is one of the studies that you 21 relied upon in your report; correct? 22 A. M-hm. 23 Q. Okay. Go to page 32 of this document. And 24 if you go four paragraphs up from the bottom, it 25 says (as read):</p>
<p style="text-align: right;">Page 375</p> <p>1 accepted and validated as a psychiatric 2 condition by recognized authorities and 3 peer-reviewed literature." 4 Do you see that? 5 A. I'm sorry. 6 Q. And this is just -- I'm sorry, I was 7 reading the heading on page 8 under which this 8 report falls. 9 A. Oh, okay. Yes. 10 Q. Okay. So this is an example of, in your 11 opinion, a study which has established that social 12 media addiction is accepted and validated as a 13 psychiatric condition by recognized authorities in 14 peer-reviewed literature; is that right? 15 A. Well, the report acknowledges an absence of 16 a diagnosis of social media addiction in the DSM and 17 the ICD-11. But it really uses the term "social 18 media addiction" -- 19 Q. M-hm. 20 A. -- as measured by the various scales. 21 Q. Okay. And if you could go to page 7 of 22 this report, and you'll see from the bottom of the 23 page, the third paragraph up -- 24 A. M-hm. 25 Q. -- it starts with (as read):</p>	<p style="text-align: right;">Page 377</p> <p>1 "Content-based platforms such as 2 video-sharing and entertainment-focused 3 social media such as TikTok and Instagram 4 were associated with significantly more 5 overuse than chat-based media such as 6 Snapchat and Messenger." 7 Do you see that? 8 A. I'm sorry. Which paragraph? I'm at the 9 page, but I'd like -- 10 Q. Sorry. It's the fourth paragraph from the 11 bottom. It starts "Content-based platforms" on 12 page 32. 13 A. Yes, I do see that. 14 Q. Yes. 15 A. M-hm. 16 Q. And, again, it says (as read): 17 "Content-based platforms such as 18 video-sharing and entertainment-focused 19 social media such as TikTok and Instagram 20 were associated with significantly more 21 overuse than chat-based media such as 22 Snapchat and Messenger." 23 Do you see that? 24 A. I do see that. 25 Q. And do you have any reason to disagree with</p>

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<p style="text-align: right;">Page 378</p> <p>1 that opinion?</p> <p>2 A. No.</p> <p>3 Q. Okay. In page 48 of your report, that's</p> <p>4 when you begin your Snapchat-specific analysis; is</p> <p>5 that correct?</p> <p>6 MS. McNABB: Objection. Misstates report.</p> <p>7 THE WITNESS: That's where I take a deeper</p> <p>8 dive into specific --</p> <p>9 BY MR. BLAVIN:</p> <p>10 Q. Right.</p> <p>11 A. -- Snapchat documents.</p> <p>12 Q. The prior parts of your report discuss your</p> <p>13 own methodology and your overview of the literature</p> <p>14 of social media addiction at large; is that correct?</p> <p>15 A. That's correct.</p> <p>16 Q. And this part of your report discusses</p> <p>17 Snapchat specifically.</p> <p>18 And this part of your report is based</p> <p>19 entirely on Snap's internal documents; is that</p> <p>20 right?</p> <p>21 A. Yes.</p> <p>22 Q. And were any of these Snap documents that</p> <p>23 you relied on published in peer-reviewed scientific</p> <p>24 journals?</p> <p>25 A. I don't believe so, no.</p>	<p style="text-align: right;">Page 380</p> <p>1 Q. Got it.</p> <p>2 A. Yeah.</p> <p>3 Q. And that, in your opinion, is a clinical or</p> <p>4 diagnostic tool used in psychiatry?</p> <p>5 A. It's similar to frameworks for</p> <p>6 understanding how and why people get triggered to</p> <p>7 engage in the behaviors to get rewards which then</p> <p>8 lead to habit formation and in severe cases</p> <p>9 addiction.</p> <p>10 Q. I believe before you said that you didn't</p> <p>11 request any data relating to time spent on the</p> <p>12 Snapchat app.</p> <p>13 Did you request any outside datasets or</p> <p>14 research on user experience or well-being from Snap?</p> <p>15 MS. McNABB: Objection. Misstates prior</p> <p>16 testimony.</p> <p>17 THE WITNESS: I did not request any outside</p> <p>18 analysis. I based my review on materials</p> <p>19 considered.</p> <p>20 MR. BLAVIN: Thank you very much,</p> <p>21 Dr. Lembke.</p> <p>22 THE WITNESS: You're welcome.</p> <p>23 MR. BLAVIN: No further questions.</p> <p>24 MS. LEHMAN: Can we go off the record while</p> <p>25 we switch?</p>
<p style="text-align: right;">Page 379</p> <p>1 Q. And were any of them reviewed or validated</p> <p>2 by independent experts?</p> <p>3 A. I don't --</p> <p>4 MS. McNABB: Objection. Vague.</p> <p>5 THE WITNESS: Not to my knowledge.</p> <p>6 BY MR. BLAVIN:</p> <p>7 Q. Okay. Did any of them involve clinical or</p> <p>8 diagnostic tools used in psychiatry or psychology?</p> <p>9 MS. McNABB: Objection. Vague. And</p> <p>10 speculation.</p> <p>11 THE WITNESS: Yes.</p> <p>12 BY MR. BLAVIN:</p> <p>13 Q. Which one?</p> <p>14 A. So this is Nir Eyal's hook analysis of how</p> <p>15 to get people addicted to things, and that was</p> <p>16 referenced in Snapchat's internal documents.</p> <p>17 Q. Are you -- are you refer -- what page are</p> <p>18 you on? I'm sorry.</p> <p>19 A. I'm on page 54.</p> <p>20 Q. Oh, this is "The Hook" image.</p> <p>21 A. Yes.</p> <p>22 Q. Is that what you're referencing?</p> <p>23 A. Yeah. M-hm.</p> <p>24 Q. Okay. And --</p> <p>25 A. The habit -- the habit-forming flywheel.</p>	<p style="text-align: right;">Page 381</p> <p>1 MR. BLAVIN: Yeah.</p> <p>2 THE VIDEOGRAPHER: The time is 6:20. We're</p> <p>3 off the record.</p> <p>4 (Recess taken from 6:20 to 6:22.)</p> <p>5 THE VIDEOGRAPHER: The time is 6:21. We're</p> <p>6 back on the record.</p> <p>7 EXAMINATION BY MS. LEHMAN</p> <p>8 BY MS. LEHMAN:</p> <p>9 Q. Good afternoon, Doctor. My name is</p> <p>10 Katie Lehman. We haven't met before today. I</p> <p>11 represent TikTok.</p> <p>12 Are you prepared to continue and finish up</p> <p>13 your deposition today?</p> <p>14 A. I am.</p> <p>15 Q. Okay. And are you prepared to give your</p> <p>16 final opinions as they relate to TikTok today?</p> <p>17 A. What do you mean by "final opinions"?</p> <p>18 Q. I mean do you anticipate doing any</p> <p>19 additional work to develop any additional opinions</p> <p>20 related to TikTok?</p> <p>21 MS. McNABB: Objection. Speculation.</p> <p>22 THE WITNESS: I mean, I continue to review</p> <p>23 the literature. But at this time, you know, the</p> <p>24 discovery is closed, so this is my report.</p> <p>25 ///</p>

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<p style="text-align: right;">Page 382</p> <p>1 BY MS. LEHMAN:</p> <p>2 Q. And are all of your opinions as they relate</p> <p>3 to TikTok reflected in your report?</p> <p>4 MS. McNABB: Objection.</p> <p>5 (Simultaneous speakers - unclear.)</p> <p>6 THE WITNESS: Again, the same answer as</p> <p>7 before. If I'm asked to opine on a new document</p> <p>8 presented to me, I'm happy to offer that opinion.</p> <p>9 But these are my opinions.</p> <p>10 THE STENOGRAPHER: I wasn't able to get</p> <p>11 your full objection.</p> <p>12 MS. McNABB: I just said objection.</p> <p>13 Misstates prior testimony.</p> <p>14 THE STENOGRAPHER: Thank you.</p> <p>15 BY MS. LEHMAN:</p> <p>16 Q. Is it correct that you do not currently</p> <p>17 have a TikTok account?</p> <p>18 A. That is correct.</p> <p>19 Q. Have you ever had a TikTok account?</p> <p>20 A. No.</p> <p>21 Q. Have any of your children ever had TikTok</p> <p>22 accounts?</p> <p>23 A. Yes. I believe so.</p> <p>24 Q. How many?</p> <p>25 A. I'm not sure.</p>	<p style="text-align: right;">Page 384</p> <p>1 A. So, you know, I -- I did say that, but I</p> <p>2 think that I was on YouTube Shorts. And so I think</p> <p>3 I misspoke. Because I don't think I was on TikTok.</p> <p>4 I think I was on YouTube Shorts.</p> <p>5 Q. Okay. But it's -- it would be inaccurate</p> <p>6 to say that you had ever spent three hours on</p> <p>7 TikTok; correct?</p> <p>8 A. I think that's inaccurate. I think I</p> <p>9 misspoke.</p> <p>10 Q. And are you able to estimate how many times</p> <p>11 you've actually looked over the shoulder of someone</p> <p>12 who's using TikTok or showing you something on</p> <p>13 TikTok?</p> <p>14 A. No.</p> <p>15 Q. Are you able to estimate how much time in</p> <p>16 total you spent looking over the shoulder of someone</p> <p>17 who's showing you something on TikTok?</p> <p>18 A. No.</p> <p>19 Q. Then do you -- strike that.</p> <p>20 Do you have any information about how</p> <p>21 users, when they are on TikTok -- how they use that</p> <p>22 time, like, what they are doing to engage with the</p> <p>23 app?</p> <p>24 A. I have not seen any data on the breakdown</p> <p>25 of what users are doing on that time.</p>
<p style="text-align: right;">Page 383</p> <p>1 Q. And is it correct that the only time that</p> <p>2 you have personally engaged with TikTok was looking</p> <p>3 over the shoulder of someone, either your child or</p> <p>4 an acquaintance, who was using TikTok?</p> <p>5 A. No, that's not entirely correct.</p> <p>6 Q. Okay. When was the other occasions when</p> <p>7 you engaged with TikTok?</p> <p>8 A. My patients showing me the kinds of</p> <p>9 behaviors that they're struggling with on TikTok and</p> <p>10 also TikTok's own internal documents as well as some</p> <p>11 studies in the medical literature researching</p> <p>12 TikTok.</p> <p>13 Q. Okay. And is it -- is it correct that -- I</p> <p>14 want to make sure that I have the full universe --</p> <p>15 the only time that you have engaged with TikTok</p> <p>16 would be the internal documents that you reviewed,</p> <p>17 medical literature that you reviewed, looking over</p> <p>18 the shoulder of your child or someone else that</p> <p>19 you're friends with, or when your patients have</p> <p>20 described their own use of TikTok; is that correct?</p> <p>21 A. That's right.</p> <p>22 Q. Now, have you previously said during</p> <p>23 interviews that the first time you used TikTok you</p> <p>24 were on it for three hours and that time passed</p> <p>25 without you realizing it?</p>	<p style="text-align: right;">Page 385</p> <p>1 Wait a second. Let me look at my report</p> <p>2 for one second.</p> <p>3 I've looked at broad usage, not a breakdown</p> <p>4 of what they've been doing on the platform.</p> <p>5 Q. And when you say "broad usage," what do you</p> <p>6 mean by that?</p> <p>7 A. Time spent, the time of day that it was</p> <p>8 spent, as well as qualitative research on how it was</p> <p>9 affecting them.</p> <p>10 Q. But you have not looked at any data that</p> <p>11 attempts to analyze how users use the time that</p> <p>12 they're on TikTok; correct?</p> <p>13 A. When you say "how they use the time," I'm</p> <p>14 not sure I'm --</p> <p>15 (Simultaneous speakers - unclear.)</p> <p>16 BY MS. LEHMAN:</p> <p>17 Q. Right.</p> <p>18 So whether they're posting something,</p> <p>19 whether they're looking at content posted by someone</p> <p>20 else, whether they're -- how exactly they're using</p> <p>21 the app once they're on the app.</p> <p>22 A. I've not looked at a breakdown of the</p> <p>23 specifics of how they're -- where they're spending</p> <p>24 their time when they're on the app.</p> <p>25 Q. Okay. And have you ever personally</p>

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<p style="text-align: right;">Page 386</p> <p>1 conducted any study of TikTok?</p> <p>2 A. No.</p> <p>3 Q. Do you cite in your report any scientific</p> <p>4 peer-reviewed literature that specifically studies</p> <p>5 TikTok and determines that TikTok, the app, so the</p> <p>6 specific app, is addictive?</p> <p>7 A. Can you say your question again? Sorry.</p> <p>8 Q. Of course.</p> <p>9 Do you cite in your report any scientific</p> <p>10 peer-reviewed literature that specifically studies</p> <p>11 TikTok and determines that the TikTok app, that</p> <p>12 specific app, is addictive?</p> <p>13 A. Well, there is the study by Su, et al.,</p> <p>14 that I talked about earlier that looks at whether a</p> <p>15 tailored video -- TikTok videos are more reinforcing</p> <p>16 than general videos, and finds that they are.</p> <p>17 But nothing beyond that.</p> <p>18 Q. Did you conduct a Bradford Hill analysis</p> <p>19 specific to TikTok?</p> <p>20 A. I mean, I'm always doing a Bradford Hill</p> <p>21 analysis in my study of this. I didn't write one up</p> <p>22 for this report because my understanding is that --</p> <p>23 and I know that another expert has done that, and</p> <p>24 the judge didn't want duplicative reports.</p> <p>25 And in my analysis, I include TikTok in</p>	<p style="text-align: right;">Page 388</p> <p>1 what I want to specifically talk to you about is I</p> <p>2 want to specifically talk to you about withdrawal;</p> <p>3 okay?</p> <p>4 So when someone goes into withdrawal from</p> <p>5 crack cocaine, what do they experience?</p> <p>6 A. Crack cocaine is a stimulant, so withdrawal</p> <p>7 symptoms are usually in the category of sedation</p> <p>8 because withdrawal is usually the opposite of</p> <p>9 whatever the drug does, although that's not</p> <p>10 universally the case. So they'll feel sedated,</p> <p>11 lethargic, depressed, anxious, irritable, unable to</p> <p>12 sleep.</p> <p>13 Q. Okay. Can it interfere with their ability</p> <p>14 to go to work and perform normal functions of their</p> <p>15 everyday life?</p> <p>16 A. Yes.</p> <p>17 Q. Okay. And if somebody goes into withdrawal</p> <p>18 from social media, what symptoms do they experience?</p> <p>19 A. In severe cases of social media addiction,</p> <p>20 they can be quite similar to that. People can have</p> <p>21 the psychological symptoms of withdrawal from any</p> <p>22 addictive substance, which are anxiety,</p> <p>23 irritability, insomnia, depression, craving.</p> <p>24 And I've also seen kids, in particular, get</p> <p>25 physiologic symptoms from withdrawal with social</p>
<p style="text-align: right;">Page 387</p> <p>1 that. But I didn't do a separate one just for</p> <p>2 TikTok.</p> <p>3 Q. Well, your report doesn't include a</p> <p>4 Bradford Hill analysis for any -- for either social</p> <p>5 media generally or for any individual platform;</p> <p>6 correct?</p> <p>7 A. Not in my report, no.</p> <p>8 Q. Now, you have said previously -- you've</p> <p>9 previously made comments comparing TikTok to crack</p> <p>10 cocaine; correct?</p> <p>11 A. I believe it. I'm not remembering the</p> <p>12 specific comment.</p> <p>13 Q. Okay. Well, a comment like that, do you</p> <p>14 agree, would be hyperbolic or exaggerated for</p> <p>15 effect?</p> <p>16 MS. McNABB: Object.</p> <p>17 THE WITNESS: I'm not sure it's</p> <p>18 exaggerated. I think that TikTok is especially</p> <p>19 pernicious when it comes to safety and kids.</p> <p>20 BY MS. LEHMAN:</p> <p>21 Q. So you believe that TikTok is the</p> <p>22 equivalent of crack cocaine?</p> <p>23 A. I believe that TikTok is a highly addictive</p> <p>24 medium and harmful for kids.</p> <p>25 Q. Okay. Well, let's talk about that. And</p>	<p style="text-align: right;">Page 389</p> <p>1 media, nausea, headache, flu-like symptoms, as well</p> <p>2 as severe emotion dysregulation, temper tantrums,</p> <p>3 you know, screaming, flinging themselves against the</p> <p>4 wall, things like that.</p> <p>5 Q. How many patients have you seen fling</p> <p>6 themselves against the wall while they're in social</p> <p>7 media withdrawal?</p> <p>8 A. Well, I don't --</p> <p>9 MS. McNABB: Objection. Misstates</p> <p>10 testimony.</p> <p>11 THE WITNESS: Yeah. So I've not -- I don't</p> <p>12 see them do that. This is their parents describing</p> <p>13 these problems.</p> <p>14 BY MS. LEHMAN:</p> <p>15 Q. So that's not something you've ever</p> <p>16 personally observed?</p> <p>17 A. Well, how could I? I mean, I'm not in</p> <p>18 these people's homes.</p> <p>19 It's, you know, when they bring their</p> <p>20 children in or my adult patients describing their</p> <p>21 experiences in the past.</p> <p>22 Q. And you would agree that there are other</p> <p>23 substances that can be quite dangerous when a user</p> <p>24 goes into detox or stops using them; correct?</p> <p>25 A. Yes.</p>

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<p style="text-align: right;">Page 390</p> <p>1 Q. So, for example, when someone stops 2 drinking alcohol, they can -- they can go into very 3 serious withdrawal, can't they? 4 A. Yes. 5 Q. And someone who is an alcoholic and who is 6 going into detox for alcohol, you would recommend 7 that they be under the care of a medical 8 professional to ensure that they do so safely, 9 wouldn't you? 10 A. The vast majority of people with alcohol 11 use disorder can withdraw from alcohol, stop using 12 alcohol without having serious medical sequelae. 13 It's a minority of individuals who needs a medically 14 monitored detox. 15 Q. And -- but for -- there are people who are 16 severe alcoholics who could even be at risk of death 17 going into detox from alcohol; correct? 18 A. That's correct. But most substances that 19 people get addicted to do not have life-threatening 20 withdrawal. 21 So the exceptions are alcohol, 22 benzodiazepines, and in some cases opioids. But, 23 for example, crack cocaine, although very 24 uncomfortable and painful, is usually not associated 25 with a life-threatening withdrawal.</p>	<p style="text-align: right;">Page 392</p> <p>1 metaphor of the balance and the -- (inaudible) 2 (Stenographer interrupted for clarification 3 of the record.) 4 THE WITNESS: -- the balance and the 5 gremlins, talking about how with repeated exposure 6 to any reinforcing substance or behavior, our brain 7 adapts to that stimulus such that over time we need 8 more and more to get the same effect, or it just 9 stops working as well as it used to. 10 And then when we try to cut back or stop, 11 our brain has a built-in response that makes us feel 12 very uncomfortable as a way to try to get us to use 13 again to restore the new baseline homeostasis. 14 So I wouldn't use -- you know, with a 15 layperson on the street, it would take more time to 16 go through that. But that's the basic idea. 17 BY MS. LEHMAN: 18 Q. And for someone who is -- has been using 19 social media, you talked at length today about how 20 long it takes for them to recover and detox. 21 We don't need to go over that again, but is 22 it correct that their brain returns to baseline 23 after they stop using social media? 24 MS. McNABB: Objection. Speculation. 25 THE WITNESS: We don't really know. You</p>
<p style="text-align: right;">Page 391</p> <p>1 Q. Okay. And what are the withdrawal symptoms 2 that someone can experience if they are an IV opiate 3 user? 4 A. So opioid withdrawal has classic symptoms, 5 like nausea, vomiting, diarrhea, piloerection, 6 irritability, anxiety, dysphoria, craving, autonomic 7 instability, flu-like symptoms. 8 Q. So I think you said -- you said it quite 9 nicely, but someone who's in detox from IV heroin, I 10 mean, these are people who can lose control of their 11 bowels; correct? 12 A. That's correct. 13 Q. Okay. And would you agree that when 14 someone is going into withdrawal, that that is 15 really just a physical manifestation of the desire 16 or the longing for that substance? 17 A. I'm not quite sure of your use of the words 18 a "desire" or a "longing for that substance." I'm 19 not quite sure what you -- you mean by that. 20 Q. Sure. 21 How would you describe what withdrawal is 22 to -- to a layman on the street if they asked you to 23 describe withdrawal? What would you tell them? 24 A. I would describe the process of 25 neuroadaptation, which I often do using that</p>	<p style="text-align: right;">Page 393</p> <p>1 know, again, we are sort of observing phenomenology, 2 patterns of behavior over many different patients. 3 And typically what we see is that by about Week 3 to 4 4 in most people, the symptoms related to their 5 addiction are largely improved or improving. But 6 that's not true in every case. 7 But we do suspect that once someone has 8 been addicted to a substance or behavior, that their 9 brain is probably permanently changed in some way 10 such that even with sustained abstinence, with a 11 single exposure to their addictive substance, they 12 can, you know, be plummeted right back into those 13 addictive behaviors without the same kind of ramp-up 14 period that was required to initially get them into 15 that addicted state. 16 BY MS. LEHMAN: 17 Q. And can you cite me to any peer-reviewed 18 study that establishes that point for social media? 19 MS. McNABB: Objection. Vague. 20 THE WITNESS: Which point exactly? 21 BY MS. LEHMAN: 22 Q. The point that once someone has sustained 23 abstinence to the exposures, their addictive 24 substance, it can plummet, but they can go right 25 back to their addictive behaviors without the same</p>

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<p style="text-align: right;">Page 394</p> <p>1 kind of ramp-up period?</p> <p>2 A. I mean, work by Telzer shows that there is</p> <p>3 neuroadaptation or tolerance to social media, and</p> <p>4 other studies that I cite show that there are very</p> <p>5 similar brain changes, as we see with drug and</p> <p>6 alcohol addiction.</p> <p>7 But my, you know, explanation of what</p> <p>8 happens with withdrawal and then returning to</p> <p>9 addictive behaviors with exposure are primarily</p> <p>10 based on my clinical experience.</p> <p>11 Q. Now, in your report on page 68, you state</p> <p>12 that TikTok has no age verification process.</p> <p>13 What is the basis for that statement?</p> <p>14 A. That's internal documents from TikTok that</p> <p>15 I reviewed.</p> <p>16 Q. Okay. So you're not -- you're not familiar</p> <p>17 with TikTok's multi-step age assurance program?</p> <p>18 MS. McNABB: Objection. Foundation.</p> <p>19 THE WITNESS: I believe, and I -- I say</p> <p>20 here, too, that although they have a process -- so</p> <p>21 maybe I should have stated this a little bit</p> <p>22 differently -- although they have a process, it's</p> <p>23 not verified, it's not authenticated. Kids can go</p> <p>24 on TikTok and say that they're 18 even if they're</p> <p>25 not or say that they're 13 even if they're not.</p>	<p style="text-align: right;">Page 396</p> <p>1 BY MS. LEHMAN:</p> <p>2 Q. You mentioned TikTok's internal documents.</p> <p>3 Were any of the internal documents that you</p> <p>4 reviewed from TikTok, were they published in any</p> <p>5 peer-reviewed journals?</p> <p>6 A. I don't believe so, no.</p> <p>7 Q. Were any of the TikTok internal documents</p> <p>8 that you reviewed -- did they include data of a</p> <p>9 review from third-party sources or validation of</p> <p>10 data from third-party sources or experts?</p> <p>11 MS. McNABB: Objection. Vague. And</p> <p>12 compound.</p> <p>13 THE WITNESS: Can I ask what you mean by</p> <p>14 "validation of sources from third-party experts"?</p> <p>15 BY MS. LEHMAN:</p> <p>16 Q. Sure.</p> <p>17 Did any of them include validated data that</p> <p>18 had been reviewed by any expert or anyone outside of</p> <p>19 TikTok?</p> <p>20 A. Not that I know of.</p> <p>21 Q. Okay. Have you ever told a patient that it</p> <p>22 would be impossible for them to stop using social</p> <p>23 media?</p> <p>24 A. I don't think so.</p> <p>25 Q. Would you ever tell them that?</p>
<p style="text-align: right;">Page 395</p> <p>1 BY MS. LEHMAN:</p> <p>2 Q. And what is your understanding about the</p> <p>3 process that happens after someone gives their age</p> <p>4 once they're using TikTok?</p> <p>5 MS. McNABB: Objection. Vague.</p> <p>6 THE WITNESS: My understanding is that if</p> <p>7 they give the age of 13 or higher, then they can</p> <p>8 create an account.</p> <p>9 BY MS. LEHMAN:</p> <p>10 Q. Okay. And do you have an understanding</p> <p>11 about the age assurance steps that TikTok has in</p> <p>12 place after someone provides their date of birth?</p> <p>13 MS. McNABB: Objection. Foundation.</p> <p>14 THE WITNESS: No, I don't.</p> <p>15 BY MS. LEHMAN:</p> <p>16 Q. Have you requested any information about</p> <p>17 that from plaintiffs' counsel?</p> <p>18 A. I didn't specifically request that.</p> <p>19 Q. Have you requested to review any of the</p> <p>20 expert reports that specifically outline the</p> <p>21 multi-steps in TikTok's age assurance program?</p> <p>22 MS. McNABB: Objection. Foundation.</p> <p>23 THE WITNESS: I didn't specifically ask for</p> <p>24 that.</p> <p>25 ///</p>	<p style="text-align: right;">Page 397</p> <p>1 MS. McNABB: Objection. Speculation.</p> <p>2 THE WITNESS: I mean -- I mean, I don't</p> <p>3 think so. There's always hope for recovery. I</p> <p>4 don't think I would say that to a patient.</p> <p>5 BY MS. LEHMAN:</p> <p>6 Q. You've talked about the four expert</p> <p>7 reports.</p> <p>8 Do you know Dr. Tucker?</p> <p>9 A. What do you mean by "know" him?</p> <p>10 Q. Are you personally acquainted with</p> <p>11 Dr. Tucker?</p> <p>12 A. I mean, I've encountered him in opioid</p> <p>13 litigation and in other -- and one other case, but I</p> <p>14 don't personally know him. I've only ever met him</p> <p>15 in the context of litigation.</p> <p>16 Q. Have you ever met or worked with</p> <p>17 Dr. Kishida?</p> <p>18 A. No.</p> <p>19 Q. Have you ever met or worked with</p> <p>20 Dr. Auerbach?</p> <p>21 A. No.</p> <p>22 Q. Have you ever met or worked with</p> <p>23 Dr. Galván?</p> <p>24 A. No.</p> <p>25 Q. Have you reviewed any peer-reviewed article</p>

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<p style="text-align: right;">Page 398</p> <p>1 written by Dr. Galván?</p> <p>2 A. No.</p> <p>3 Q. Have you reviewed any peer-reviewed article</p> <p>4 written by Dr. Auerbach?</p> <p>5 A. No.</p> <p>6 Q. Have you reviewed any peer-reviewed article</p> <p>7 written by Dr. Kishida?</p> <p>8 A. Yes.</p> <p>9 Q. What article is that?</p> <p>10 A. I'm not recalling the name, but it was an</p> <p>11 article he coauthored on the impact of social</p> <p>12 context on dopamine release. And it was a very</p> <p>13 quick review, just to try to get a sense of what the</p> <p>14 article was about.</p> <p>15 Q. And when did you review that article by</p> <p>16 Dr. Kishida?</p> <p>17 A. Sometime after I read his report.</p> <p>18 Q. Is that the only peer-reviewed article by</p> <p>19 Dr. Kishida that you've read?</p> <p>20 A. I believe so, yes.</p> <p>21 Q. And have you reviewed any peer-reviewed</p> <p>22 articles written by Dr. Tucker?</p> <p>23 A. No.</p> <p>24 Q. Do you agree that companies across</p> <p>25 different industries, so not just focusing on social</p>	<p style="text-align: right;">Page 400</p> <p>1 on this is "TikTok History 101 - U.S."?</p> <p>2 A. Yes.</p> <p>3 Q. Okay. Now, in your review of TikTok</p> <p>4 internal company documents, did you see that TikTok</p> <p>5 categorizes its user demographics into five</p> <p>6 different categories, L1 through L5?</p> <p>7 A. Yes.</p> <p>8 Q. Okay. And those relate to different age</p> <p>9 ranges?</p> <p>10 A. Yes.</p> <p>11 Q. And so L1 is those who are 13 to 15?</p> <p>12 A. I believe so. I think I reference that in</p> <p>13 my report. I'm not remembering the exact label.</p> <p>14 Q. Okay. Well, I will -- I will tell you that</p> <p>15 I -- I believe that to be the correct age range. So</p> <p>16 please do tell me if you think that's wrong, but I</p> <p>17 think that that's correct.</p> <p>18 A. Yeah, I accept your representation of that.</p> <p>19 Q. All right. And then is it your</p> <p>20 understanding that L2 is 15 to 17 year olds?</p> <p>21 A. Sure.</p> <p>22 Q. Okay. L3 is 18 to 24 year olds?</p> <p>23 A. Okay.</p> <p>24 Q. And L5 is 35 plus?</p> <p>25 A. Okay.</p>
<p style="text-align: right;">Page 399</p> <p>1 media, that they study the people who use their</p> <p>2 products?</p> <p>3 A. Yes.</p> <p>4 Q. And do you have any criticism of the fact</p> <p>5 that companies study the people who use their</p> <p>6 products?</p> <p>7 A. I mean, I don't have criticism of the fact</p> <p>8 that they study the people. But I have criticism</p> <p>9 that when they find that their products cause harm,</p> <p>10 they don't issue a warning about the product, they</p> <p>11 don't try to change the product to make it safer.</p> <p>12 And specifically with the defendants, I</p> <p>13 also would criticize that they're not making their</p> <p>14 data publicly available to researchers so that we</p> <p>15 can have better data to understand the harm that</p> <p>16 their products are causing.</p> <p>17 MS. LEHMAN: I'm going to respectfully move</p> <p>18 to strike as non-responsive starting with "But I</p> <p>19 have criticism."</p> <p>20 All right. I want to show you a document.</p> <p>21 We'll mark this as Exhibit No. 12.</p> <p>22 (Marked for identification purposes,</p> <p>23 Lembke Exhibit 12.)</p> <p>24 BY MS. LEHMAN:</p> <p>25 Q. All right. And can you confirm the title</p>	<p style="text-align: right;">Page 401</p> <p>1 Q. Okay. And L4 is 24 to 34?</p> <p>2 A. Okay.</p> <p>3 Q. All right. So then if you'll turn in the</p> <p>4 document that I've given to you -- well, first off,</p> <p>5 do you remember reviewing this document?</p> <p>6 A. I've reviewed a lot of documents. I'm not</p> <p>7 specifically recalling this document.</p> <p>8 Q. Okay. Well, I will represent to you that</p> <p>9 you cite this document in footnote 300 --</p> <p>10 A. Okay.</p> <p>11 Q. -- on page 68 of your report.</p> <p>12 And within the document itself, I'd like to</p> <p>13 direct you to the page ending -17.</p> <p>14 A. M-hm.</p> <p>15 Q. And just let me know when you're there.</p> <p>16 A. Okay. Yeah.</p> <p>17 Q. All right. And do you see over on the</p> <p>18 right side of the page there are some -- some</p> <p>19 comments?</p> <p>20 A. Yes, I do see that.</p> <p>21 Q. All right. And do you see that the</p> <p>22 comments are -- they're commenting on some text, and</p> <p>23 the text says (as read):</p> <p>24 "The goal of our first taste cluster</p> <p>25 analysis was to size the meme gamer</p>

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<p style="text-align: right;">Page 402</p> <p>1 change taste cluster and get an idea for</p> <p>2 our main L34 user segments."</p> <p>3 Do you see that?</p> <p>4 A. I do see that.</p> <p>5 Q. Okay. And do you understand "L34" to</p> <p>6 reference the groups for L3 and L4?</p> <p>7 A. Sure.</p> <p>8 Q. Okay. Have you seen that nomenclature in</p> <p>9 other TikTok internal documents that you have</p> <p>10 reviewed?</p> <p>11 A. Yes.</p> <p>12 Q. Okay. And if you look over to the right in</p> <p>13 the comments, do you see that actually Comment 15</p> <p>14 asks (as read):</p> <p>15 "For my own learning, what does 'L34'</p> <p>16 refer to?"</p> <p>17 A. I do see that, yes.</p> <p>18 Q. Okay. And the response, it says (as read):</p> <p>19 "L12345 refers to the age of users.</p> <p>20 We usually focus on L345, 18 plus."</p> <p>21 Do you see that?</p> <p>22 A. I do see that.</p> <p>23 Q. Okay. And then do you see over to the</p> <p>24 right, then there's the breakdown of the different</p> <p>25 age groups between L3, L4, and L5?</p>	<p style="text-align: right;">Page 404</p> <p>1 BY MS. LEHMAN:</p> <p>2 Q. Now, is it your opinion that aspects of</p> <p>3 social media that make -- or strike that.</p> <p>4 Is it your opinion that aspects of social</p> <p>5 media that reduce or make the material available</p> <p>6 less voluminous would decrease the addictive</p> <p>7 potential of social media?</p> <p>8 MS. McNABB: Objection. Compound. Vague.</p> <p>9 THE WITNESS: It's my opinion that anything</p> <p>10 that reduces the friction to access or increases the</p> <p>11 quantity increases the addictive potential. So it</p> <p>12 makes logical sense that if you reduced that, that</p> <p>13 it would be less addictive. That's the hope,</p> <p>14 anyway.</p> <p>15 BY MS. LEHMAN:</p> <p>16 Q. And then to unpack that a little bit</p> <p>17 further, would it also be your opinion that anything</p> <p>18 that increases the friction to access would decrease</p> <p>19 the addictive potential?</p> <p>20 A. I think it would, yes.</p> <p>21 Q. Would you agree that an effort to increase</p> <p>22 friction to watching videos would be a good thing</p> <p>23 for TikTok to do?</p> <p>24 A. I mean, you'd have to tell me what the</p> <p>25 specific methodology was. In general, I can agree</p>
<p style="text-align: right;">Page 403</p> <p>1 A. Where exactly is that?</p> <p>2 Q. It's in Comment 16.</p> <p>3 A. Okay. Yes, I do see that.</p> <p>4 Q. Okay. And according to this internal</p> <p>5 document from TikTok, TikTok is focusing on users</p> <p>6 who are 18 and older; correct?</p> <p>7 A. Well, I mean, this is one small, little</p> <p>8 comment in a wealth of documentation that makes it</p> <p>9 very clear that TikTok is focusing on kids.</p> <p>10 Q. Okay. Well, looking -- I'm looking at --</p> <p>11 this is an internal company document; correct?</p> <p>12 A. Yeah.</p> <p>13 Q. All right. And what the commenter says is</p> <p>14 (as read):</p> <p>15 "We usually focus on L345."</p> <p>16 Do you see that?</p> <p>17 A. Well, that particular individual may be</p> <p>18 focusing on L345, but it's very clear, if you look</p> <p>19 at the totality of the evidence, that TikTok is</p> <p>20 focusing on kids.</p> <p>21 Q. Okay.</p> <p>22 MS. LEHMAN: And I respectfully move to</p> <p>23 strike as nonresponsive starting with "but it's very</p> <p>24 clear."</p> <p>25 ///</p>	<p style="text-align: right;">Page 405</p> <p>1 with that, but I'd really want to know what specific</p> <p>2 intervention you're talking about.</p> <p>3 Q. Okay. Would you agree that an effort to</p> <p>4 allow TikTok users to have more control over what</p> <p>5 they see on TikTok is a good thing to do?</p> <p>6 A. I'm sorry. Say that again.</p> <p>7 Q. It's okay. I see -- I see you're counting</p> <p>8 time. So don't worry. We're still in time.</p> <p>9 Would you agree that an effort to allow</p> <p>10 TikTok users to have increased control over what</p> <p>11 they see on TikTok is a good thing to do?</p> <p>12 A. Not necessarily.</p> <p>13 Q. You think it's better for users to have</p> <p>14 less control?</p> <p>15 A. I think this is a complicated issue. A lot</p> <p>16 of times, you know, the companies talk about</p> <p>17 increasing user control, but what that really</p> <p>18 amounts to is more tailored -- more tailored</p> <p>19 content, which I believe increases the addictive</p> <p>20 potential.</p> <p>21 If we're talking about user control in the</p> <p>22 sense of user agency so that they can decrease their</p> <p>23 risk of out-of-control, compulsive use, that would</p> <p>24 be good. I have not seen, you know, any evidence</p> <p>25 that TikTok has effectively created those kinds of</p>

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<p style="text-align: right;">Page 406</p> <p>1 controls for its users.</p> <p>2 Q. Would you agree that reminding users how</p> <p>3 long they have been on TikTok would be a good thing</p> <p>4 to do?</p> <p>5 A. I think I was really hopeful that by</p> <p>6 telling users about time spent that it would help</p> <p>7 them reduce their compulsive overconsumption. But</p> <p>8 I'm not seeing that that's effective, and TikTok's</p> <p>9 own internal documents as well as the documents of</p> <p>10 other defendants shows that very few people are</p> <p>11 using those, quote-unquote, well-being measures and</p> <p>12 it's all opt in and they often use them for a time</p> <p>13 and then opt out.</p> <p>14 Q. You would agree, even -- even if a small</p> <p>15 percentage of users avail themselves of something</p> <p>16 like that, you would agree that's still a good thing</p> <p>17 to have available to users; correct?</p> <p>18 A. I've not seen evidence that tracking time</p> <p>19 actually helps people who are addicted reduce their</p> <p>20 use.</p> <p>21 Q. Would you agree that turning off push</p> <p>22 notifications at night is a good thing for TikTok to</p> <p>23 do?</p> <p>24 A. I do agree with that, yeah.</p> <p>25 Q. Okay. Now, we talked about the reports,</p>	<p style="text-align: right;">Page 408</p> <p>1 And so I'm just -- I'm just telling you</p> <p>2 that she's given us what the opinions are, and so</p> <p>3 she's now having the opportunity to review them.</p> <p>4 And if you're not allowing her to -- to answer</p> <p>5 questions, that's your decision.</p> <p>6 MS. McNABB: I'm not not allowing her to</p> <p>7 answer the questions. What I'm saying is, if you</p> <p>8 want her to review the reports, she has the</p> <p>9 opportunity to do that on the record. You all have</p> <p>10 had more than sufficient time. You have asked</p> <p>11 duplicative questions over and over. If you wanted</p> <p>12 to use the time to get into the rebuttal reports,</p> <p>13 you all could have done that when you had time.</p> <p>14 MS. LEHMAN: No, it is not our job to give</p> <p>15 her time on the record to review the things that she</p> <p>16 wants to have opinions about; otherwise, we could</p> <p>17 ask one question today.</p> <p>18 So she can either review them off the</p> <p>19 record and give us her opinions or she can tell us</p> <p>20 that she doesn't have any new opinions, that she has</p> <p>21 exhausted them. It's one or the other. It's a</p> <p>22 binary choice.</p> <p>23 So please do let us know.</p> <p>24 MS. McNABB: We are in disagreement on</p> <p>25 that, so ...</p>
<p style="text-align: right;">Page 407</p> <p>1 and you've said several times that if you had copies</p> <p>2 of the reports from Drs. Galván, Auerbach, Tucker,</p> <p>3 and Kishida -- I have copies of those reports. I'm</p> <p>4 happy to go off the record, and let you review those</p> <p>5 at whatever length you need to because my question</p> <p>6 to you is, do you have any other opinions about</p> <p>7 their reports that you have not already discussed</p> <p>8 with us today?</p> <p>9 MS. McNABB: Counsel, if you want to go on</p> <p>10 the record and she reviews it, which you have</p> <p>11 six minutes to do, and I don't think that's</p> <p>12 sufficient time to do that -- we're not going off</p> <p>13 the record for you to ask questions about their</p> <p>14 reports.</p> <p>15 MS. LEHMAN: Well, if she needs more than a</p> <p>16 minute or two, that's absolutely what we're going to</p> <p>17 do, because she came here today and this is our</p> <p>18 opportunity to ask her about that.</p> <p>19 And so if you're saying "I'm not going to</p> <p>20 allow you all," the defense, "the opportunity to do</p> <p>21 that," then that's fine. That's -- you can give</p> <p>22 that instruction.</p> <p>23 But I am making them available to her.</p> <p>24 This is her opportunity to tell us what their</p> <p>25 opinions are.</p>	<p style="text-align: right;">Page 409</p> <p>1 MS. LEHMAN: Okay.</p> <p>2 BY MS. LEHMAN:</p> <p>3 Q. Well, Doctor, do you have any other</p> <p>4 opinions about them?</p> <p>5 I am going to offer you the opportunity to</p> <p>6 review them off -- off the record, as much as time</p> <p>7 as you'd like, to review the records and give us any</p> <p>8 additional opinions that you have.</p> <p>9 A. I would be happy to go through each of</p> <p>10 those together with you on the record and tell you</p> <p>11 what my opinions are, but we only have five minutes</p> <p>12 left.</p> <p>13 Q. Okay. Well, I'll tell you what, do you</p> <p>14 have any opinions about the defendants' platforms</p> <p>15 that you have not disclosed to us today or that are</p> <p>16 not included in your report?</p> <p>17 MS. McNABB: Objection. Speculation.</p> <p>18 BY MS. LEHMAN:</p> <p>19 Q. Oh, and I don't want you to speculate about</p> <p>20 what your opinions are. I want you to just tell me</p> <p>21 what they are.</p> <p>22 A. Can you repeat the question?</p> <p>23 Q. Absolutely.</p> <p>24 Without speculating, do you have any</p> <p>25 opinions today about the defendants' platforms or</p>

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<p style="text-align: right;">Page 410</p> <p>1 social media that are either not included in your 2 report or that you have not discussed with us and 3 shared with us today? 4 A. No. 5 MS. McNABB: Objection. Calls for 6 speculation. 7 MS. LEHMAN: All right. Then I think let's 8 go off the record because it sounds like we have 9 five minutes. So we'll just take a quick break and 10 make sure that we're done; okay? 11 THE VIDEOGRAPHER: The time is 6:54. We're 12 off the record. 13 (Recess taken from 6:54 to 7:03.) 14 THE VIDEOGRAPHER: The time is 7:03. We're 15 on the record. 16 MS. LEHMAN: I got excited. 17 That's all the questions I have. Thank 18 you. 19 THE WITNESS: You're welcome. 20 MR. ERCOLE: I think for -- for the -- 21 subject to any, I guess, direct that -- that you do, 22 those are the questions that the defendants have. 23 MS. McNABB: Okay. Thank you. 24 I only have a few questions. So I can sit 25 here and do that if you want to look at the camera,</p>	<p style="text-align: right;">Page 412</p> <p>1 THE WITNESS: Yes. 2 BY MS. McNABB: 3 Q. And do you agree that the companies' 4 internal documents you have read form a sufficient 5 basis for your opinions in conjunction with your 6 training, experience, and literature review? 7 MR. ERCOLE: Objection to form. 8 THE WITNESS: Yes. 9 MS. McNABB: Thank you, Dr. Lembke. That 10 is all I have for you today. 11 MR. ERCOLE: Can we go off the record? 12 THE VIDEOGRAPHER: The time is 7:05. We're 13 off the record. 14 (Recess taken from 7:05 to 7:09.) 15 THE VIDEOGRAPHER: The time is 7:09. We're 16 back on the record. 17 EXAMINATION BY MR. ERCOLE 18 BY MR. ERCOLE: 19 Q. Dr. Lembke, you just -- in response to your 20 counsel's questions, you just provided testimony 21 about warnings. 22 Do you recall that? 23 A. Yes. 24 Q. Where in your -- strike that. 25 Your report does not provide any opinion</p>
<p style="text-align: right;">Page 411</p> <p>1 or I can -- Brian and I can switch spots, whatever 2 you prefer. 3 THE WITNESS: Why don't you switch if you 4 want me to look over there. 5 MS. McNABB: Okay. So let's go off the 6 record just so we can start and -- 7 THE VIDEOGRAPHER: The time is 7:04. We're 8 off the record. 9 (Recess taken from 7:04 to 7:05.) 10 THE VIDEOGRAPHER: The time is 7:05. We're 11 back on the record. 12 EXAMINATION BY MS. McNABB 13 BY MS. McNABB: 14 Q. Dr. Lembke, is it your opinion that the 15 social media companies at issue here should have 16 warned about the addictive nature of their 17 platforms? 18 MR. ERCOLE: Objection to the form. 19 THE WITNESS: Yes. 20 BY MS. McNABB: 21 Q. And, Dr. Lembke, is it your opinion that 22 the social media companies at issue here should have 23 warned about the mental health harms to adolescents 24 by using of their platforms? 25 MR. ERCOLE: Objection to form.</p>	<p style="text-align: right;">Page 413</p> <p>1 with respect to warnings; correct? 2 MS. McNABB: Objection. Misstates report. 3 THE WITNESS: I believe that in my report I 4 do, first of all, cite the Surgeon General's report 5 on the need for warnings for social media. 6 I'm sorry. I'm just trying to find that 7 place in my report. 8 BY MR. ERCOLE: 9 Q. Other than a reference to this -- 10 MS. McNABB: Counsel, you're out of time. 11 There are no more questions. 12 MR. ERCOLE: No. We're going to object 13 if -- if you -- if you don't -- if you don't allow 14 us to ask a couple of questions in response to the 15 direct question you asked, which seems to provide 16 entirely new opinions, we'll have to take this up 17 with Judge Kuhl, which I don't think she's going to 18 be super happy about if we have, like, a minute or 19 two of additional questions to ask about this. 20 MS. McNABB: We can take it up with 21 Judge Kuhl. 22 MR. ERCOLE: Okay. 23 MS. McNABB: But that is -- you are out of 24 time. There are no additional questions. 25 MR. ERCOLE: We --</p>

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<p style="text-align: right;">Page 414</p> <p>1 MR. BLAVIN: You have a pending question. 2 MR. ERCOLE: One, we have a pending 3 question. But two, beyond that -- 4 MS. McNABB: You cut off your prior 5 question. 6 MR. ERCOLE: I didn't withdraw the question 7 at all. 8 So you are -- I mean, your client is taking 9 some period of time to look for some opinion on 10 warnings that's not even detailed in the -- the 11 Opinions section. 12 BY MR. ERCOLE: 13 Q. But you can respond to the question, 14 Dr. Lembke. 15 MS. McNABB: Dr. Lembke, if you have 16 anything additional to say than you already did -- 17 (Simultaneous speakers - unclear.) 18 THE WITNESS: I do believe I talk about 19 warnings in my report. I can't find it right now. 20 MS. McNABB: That's -- 21 BY MR. ERCOLE: 22 Q. Have you -- 23 MS. McNABB: That's it for the questioning. 24 MR. ERCOLE: I'm going to ask -- I'm going 25 to ask another question. If you can -- if you want</p>	<p style="text-align: right;">Page 416</p> <p>1 MS. McNABB: That is -- 2 MR. ERCOLE: -- position? 3 MS. McNABB: -- my instruction. 4 MR. ERCOLE: Okay. 5 MS. McNABB: And that is my position. 6 MR. ERCOLE: Okay. 7 MS. McNABB: And you have used your time 8 completely. You have asked duplicative and 9 repetitive questions throughout the day. You have 10 asked questions that were not relevant to what 11 Dr. Lembke is opining on. 12 So you used your time as Judge Kuhl said 13 that you could. And you are out of time now. And 14 so, yes, the deposition is over. 15 BY MR. ERCOLE: 16 Q. Okay. So you're not going to answer my 17 question? 18 A. (Shaking head.) 19 Q. I can't -- you have to give it for the 20 record, "yes" or "no"? 21 MS. McNABB: Are you going to follow the 22 advice of your counsel is what he is asking? 23 BY MR. ERCOLE: 24 Q. Are you going to answer my question? 25 A. We're out of time.</p>
<p style="text-align: right;">Page 415</p> <p>1 to instruct her -- 2 MS. McNABB: And I will instruct her not to 3 answer. 4 MR. ERCOLE: That's fine. 5 BY MR. ERCOLE: 6 Q. Dr. Lembke, have you ever crafted a warning 7 for any product whatsoever? 8 MS. McNABB: Dr. Lembke, do not answer the 9 questions. This deposition is over. They are out 10 of time. 11 MR. ERCOLE: Okay. Well, I'll put on 12 the -- on the record, just as a -- as a statement, 13 we have not even taken the full eight and a half 14 hours. In fact, you've cut us off before finishing 15 asking those questions. 16 In addition, we were -- have not been able 17 to fully address the questions that you raised on a 18 direct examination. So if you're going to cut off 19 the deposition, that's fine. We'll hold it open, 20 and we'll take it up with Judge Kuhl as appropriate. 21 So you may be coming back here, Dr. Lembke, 22 when all you would have to do is sit for basically a 23 minute or two to answer three or four more 24 questions. 25 But is that your -- your --</p>	<p style="text-align: right;">Page 417</p> <p>1 Q. Are you -- Dr. Lembke, are you going to -- 2 the record is still open. 3 So are you going to answer my question or 4 not? 5 MS. McNABB: You can ask the -- you can 6 tell him -- you can respond to his question, or are 7 you going to follow advice from counsel? 8 THE WITNESS: I'm going to follow counsel's 9 advice. 10 THE VIDEOGRAPHER: Total time for defense 11 is 8 hours, 31 minutes. 12 Plaintiffs, 1 minute. 13 Time: 7:13. 14 We're off the record. 15 (Proceedings concluded at 7:14 p.m. PDT.) 16 ---oOo--- 17 18 19 20 21 22 23 24 25</p>

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<p>1 DECLARATION UNDER PENALTY OF PERJURY</p> <p>2</p> <p>3 I declare under penalty of perjury under</p> <p>4 the laws of the State of California that the</p> <p>5 foregoing is true and correct.</p> <p>6</p> <p>7 Executed at _____ on _____.</p> <p style="padding-left: 40px;">(Place) (Date)</p> <p>8</p> <p>9</p> <p>10</p> <p>11 _____</p> <p>12 ANNA LEMBKE, MD</p> <p>13</p> <p>14</p> <p>15</p> <p>16</p> <p>17</p> <p>18</p> <p>19</p> <p>20</p> <p>21</p> <p>22</p> <p>23</p> <p>24</p> <p>25</p>	<p>Page 418</p>
<p>1 STENOGRAPHER'S CERTIFICATE</p> <p>2 I, LORRIE L. MARCHANT, Certified Shorthand</p> <p>3 Reporter, Certificate No. 10523, for the State of</p> <p>4 California, hereby certify that ANNA LEMBKE, MD was</p> <p>5 by me duly sworn/affirmed to testify to the truth,</p> <p>6 the whole truth and nothing but the truth in the</p> <p>7 within-entitled cause; that said deposition was</p> <p>8 taken at the time and place herein named; that the</p> <p>9 deposition is a true record of the witness's</p> <p>10 testimony as reported to the best of my ability by</p> <p>11 me, a duly certified shorthand reporter and a</p> <p>12 disinterested person, and was thereafter transcribed</p> <p>13 under my direction into typewriting by computer;</p> <p>14 that request [] was [X] was not made to read and</p> <p>15 correct said deposition.</p> <p>16 I further certify that I am not interested</p> <p>17 in the outcome of said action, nor connected with,</p> <p>18 nor related to any of the parties in said action,</p> <p>19 nor to their respective counsel.</p> <p>20 IN WITNESS WHEREOF, I have hereunto set my</p> <p>21 hand this 20th day of June, 2025.</p> <p>22</p> <p>23 </p> <p>24</p> <p>25 LORRIE L. MARCHANT, RMR, CRR, CCRR, CRC</p> <p> Stenographic Certified Shorthand Reporter #10523</p>	<p>Page 419</p>

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